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## Version Overview of the Option Package "S7-Technology"

SIMATIC S7 Technology

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# Foreword

## Objective of this FAQ

With this FAQ we want to give a version overview of the available versions of the optional package "S7-Technology", which is necessary for projecting and programming of the Technology-CPU's.

## Document structure

This document is divided in the following parts.

| Part of the document              | Description  |
|-----------------------------------|--|
| Version Overview                  | The table in this part of the document gives you a quick overview of all versions of the optional package "S7-Technology" and the included or necessary Software or Firmware versions.   |
| Short Description of the versions | This part of the document provides you a short description of every version of the optional package. It illustrates, which Technology-CPU's can be used, which highlights this version of the optional package has, which system requirements are needed and what the difference is to the version before. |
| Appendix                          | This part gives you additional informations, like Bibliographic references, internet links, etc..  |

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# 1 Version Overview

The following table shows you the software versions of the program parts of the optional package "S7 Technology" and the necessary firmware versions, depending on the version of the optional package. The Technology CPUs of the type CPU 31xT(F)-3 PN/DP are listed as PROFINET-CPU's, the Technology CPUs of the type CPU 31xT(F)-2 DP are listed as PROFIBUS-CPU's.

Additional informations are given to the supported firmware versions of the drive system SINAMICS S120 and the maximum version of the PLCopen function blocks in the technology project.

|               |  |
|---------------|--|
| <b>NOTICE</b> | <b>Please notice that because of the expansion with path interpolation and pressure-controlled axes you always require an 8 MB memory card for operation when you employ the Technology firmware V4.1.5 or higher.</b> |
|---------------|--|

Table 1-1 Version Overview S7-Technology

| Version of the optional package S7-Technology | Firmware version CPU   | Firmware version Technology   | Software version Starter | Software version Scout | Supported versions SINAMICS S120             | Maximum version of PLCopen function blocks |
|---|--|---|--------------------------|------------------------|--|--|
| V4.2 SP5                                      | CPU315T-3 PN/DP:<br>V3.2<br>CPU317T-3 PN/DP:<br>V3.2<br>CPU317TF-3 PN/DP:<br>V3.2  | CPU315T-3 PN/DP:<br>V4.1.5<br>CPU317T-3 PN/DP:<br>V4.1.5<br>CPU317TF-3 PN/DP:<br>V4.1.5 | V4.5.1.2                 | V5.1.0.1               | CU320-2:<br>≤ V4.8<br><br>CU320:<br>≤ V2.6.2 | ≤ V4.2                                     |
|   | The Technology CPUs 31xT-2 DP in phase out state (see <a href="#">V4</a> ) are still supported with the firmware versions listened under <b>V4.2 SP3</b> . |   |                          |                        |  |  |
| V4.2 SP4                                      | CPU315T-3 PN/DP:<br>V3.2<br>CPU317T-3 PN/DP:<br>V3.2<br>CPU317TF-3 PN/DP:<br>V3.2  | CPU315T-3 PN/DP:<br>V4.1.5<br>CPU317T-3 PN/DP:<br>V4.1.5<br>CPU317TF-3 PN/DP:<br>V4.1.5 | V4.4.0.0                 | V4.4.0.1               | CU320-2:<br>≤ V4.7<br><br>CU320:<br>≤ V2.6.2 | ≤ V4.2                                     |
|   | The Technology CPUs 31xT-2 DP in phase out state (see <a href="#">V4</a> ) are still supported with the firmware versions listened under <b>V4.2 SP3</b> . |   |                          |                        |  |  |

| Version of the optional package S7-Technology | Firmware version CPU  | Firmware version Technology   | Software version Starter | Software version Scout | Supported versions SINAMICS S120             | Maximum version of PLCopen function blocks |
|---|---|---|--------------------------|------------------------|--|--|
| <b>V4.2 SP3</b>                               | <b>CPU 315T-3 PN/DP:</b><br>V3.2<br><b>CPU317T-3 PN/DP:</b><br>V3.2<br><b>CPU317TF-3 PN/DP:</b><br>V3.2<br><br><b>CPU315T-2DP:</b><br>V2.7<br><b>CPU317T-2DP:</b><br>V2.7<br><b>CPU317TF:</b><br>V2.7 | <b>CPU315T-3 PN/DP:</b><br>V4.1.5<br><b>CPU317T-3 PN/DP:</b><br>V4.1.5<br><b>CPU317TF-3 PN/DP:</b><br>V4.1.5<br><br><b>CPU315T-2 DP:</b><br>V4.1.5<br><b>CPU317T-2 DP:</b><br>V4.1.5<br><b>CPU317TF-2 DP:</b><br>V4.1.5 | V4.3.1.5                 | V4.3.1.12              | CU320-2:<br>≤ V4.6<br><br>CU320:<br>≤ V2.6.2 | ≤ V4.2                                     |
| <b>V4.2 SP2</b>                               | <b>CPU315T-2 DP:</b><br>V2.7<br><b>CPU317T-2 DP:</b><br>V2.7<br><b>CPU317TF-2 DP:</b><br>V2.7   | <b>CPU 315T-2 DP:</b><br>V4.1.5<br><b>CPU 317T-2 DP:</b><br>V4.1.5<br><b>CPU 317TF-2 DP:</b><br>V4.1.5  | V4.3.1.2                 | V4.3.1                 | CU320-2:<br>≤ V4.5<br><br>CU320:<br>≤ V2.6.2 | ≤ V4.2                                     |
| <b>V4.2 SP1</b>                               | <b>CPU315T-2 DP:</b><br>V2.7<br><b>CPU317T-2 DP:</b><br>V2.7<br><b>CPU317TF-2 DP:</b><br>V2.7   | <b>CPU 315T-2 DP:</b><br>V4.1.5<br><b>CPU 317T-2 DP:</b><br>V4.1.5<br><b>CPU 317TF-2 DP:</b><br>V4.1.5  | V4.2.1                   | V4.2.1                 | CU320-2:<br>≤ V4.4<br><br>CU320:<br>≤ V2.6.2 | ≤ V4.2                                     |
| <b>V4.2</b>                                   | <b>CPU315T-2 DP:</b><br>V2.7<br><b>CPU317T-2 DP:</b><br>V2.7<br><b>CPU317TF-2 DP:</b><br>V2.7   | <b>CPU 315T-2 DP:</b><br>V4.1.5<br><b>CPU 317T-2 DP:</b><br>V4.1.5<br><b>CPU 317TF-2 DP:</b><br>V4.1.5  | V4.1.5                   | V4.1.5                 | CU320-2<br>≤ V4.3.2<br><br>CU320<br>≤ V2.6.2 | ≤ V4.2                                     |
| <b>V4.1 SP1</b>                               | <b>CPU 315T-2 DP:</b><br>V2.6<br><b>CPU 317T-2 DP:</b><br>V2.6  | <b>CPU 315T-2 DP:</b><br>V4.1.1<br><b>CPU 317T-2 DP:</b><br>V4.1.1  | V4.1.2.0                 | V4.1.2.4               | ≤ V2.6.1                                     | ≤ V4.1                                     |
| <b>V4.1</b>                                   | <b>CPU 317T-2 DP:</b><br>V2.6<br><b>CPU 315T-2 DP:</b><br>V2.6  | <b>CPU 317T-2 DP:</b><br>V4.1.1<br><b>CPU 315T-2 DP:</b><br>V4.1.1  | V4.1.1                   | V4.1.1                 | ≤ V2.5                                       | ≤ V4.1                                     |
| <b>V3.0 SP2</b>                               | <b>CPU 317T-2 DP:</b><br>V2.4<br><b>CPU 315T:</b><br>V2.4   | <b>CPU 317T-2 DP:</b><br>V3.2.1<br><b>CPU 315T-2 DP:</b><br>V3.2.1  | V4.0                     | V4.0                   | ≤ V2.4                                       | ≤ V3.0                                     |

| Version of the optional package S7-Technology | Firmware version CPU   | Firmware version Technology  | Software version Starter | Software version Scout | Supported versions SINAMICS S120 | Maximum version of PLCopen function blocks |
|---|--|--|--------------------------|------------------------|----------------------------------|--|
| <b>V3.0 SP1</b>                               | <b>CPU 317T-2 DP:</b><br>V2.4<br><b>CPU 315T-2 DP:</b><br>V2.4 | <b>CPU 317T-2 DP:</b><br>V3.2.1<br><b>CPU 315T-2 DP:</b><br>V3.2.1 | V3.2.1                   | V3.2.1                 | ≤ V2.3                           | ≤ V3.0                                     |
| <b>V3.0</b>                                   | <b>CPU 317T-2 DP:</b><br>V2.4<br><b>CPU 315T-2 DP:</b><br>V2.4 | <b>CPU 317T-2 DP:</b><br>V3.2.1<br><b>CPU 315T-2 DP:</b><br>V3.2.1 | V3.2.1                   | V3.2.1                 | ≤ V2.3                           | ≤ V3.0                                     |
| <b>V2.0 SP1</b>                               | <b>CPU 317T-2 DP:</b><br>V2.3<br><b>CPU 315T-2 DP:</b><br>V2.3 | <b>CPU 317T-2 DP:</b><br>V3.1.1<br><b>CPU 315T-2 DP:</b><br>V3.1.1 | V3.2.1                   | V3.2.1                 | ≤ V2.2                           | ≤ V2.0                                     |
| <b>V2.0</b>                                   | <b>CPU 317T-2 DP:</b><br>V2.3                                  | <b>CPU 317T-2 DP:</b><br>V3.1.1                                    | V3.1.1                   | V3.1.1                 | ≤ V2.1                           | ≤ V2.0                                     |
| <b>V1.0</b>                                   | <b>CPU 317T-2 DP:</b><br>V2.1                                  | <b>CPU 317T-2 DP:</b><br>V3.0.1                                    | V3.0.1                   | V3.0.1                 | ---                              | ≤ V1.9                                     |

## 2 Compatibility Overview

### 2.1 Standard Technology CPUs

The following table shows you the MLFBs of the hardware releases and the firmware versions of the drive components, which are compatible to the version of the optional package "S7-Technology"

#### 2.1.1 SINAMICS S120 with CU320

Table 2-1 Compatibility an article number list for S7-Technology

| Version of the optional package S7-Technology                           | CPU 315T  | CPU 317T  | SINAMICS S120 Control Unit CU 320 (without CF-Card and firmware) | SINAMICS S120 CF-Card with firmware (without performance-expansion) | SINAMICS S120 CF-Card with firmware (with performance-expansion) |
|---|---|---|--|---|--|
| <b>V4.2 SP5<br/>V4.2 SP4<br/>and<br/>V4.2 SP3</b><br>6ES7864-1CC42-0YA5 | <b>CPU315T-3 DP/PN:</b><br>6ES7315-7TJ10-0AB0<br>HW: 01<br><br><b>CPU315T-2 DP:</b><br>6ES7315-6TG10-0AB0<br>HW: 02<br>or<br>6ES7315-6TH13-0AB0<br>HW: 01 | <b>CPU317T-3 DP/PN:</b><br>6ES7317-7TK10-0AB0<br>HW: 01<br><br><b>CPU317T-2 DP:</b><br>6ES7317-6TJ10-0AB0<br>HW: 02<br>or<br>6ES7317-6TK13-0AB0<br>HW: 01 | 6SL3040-0MA00-0AA1   | <b>V2.06.02</b><br>6SL3054-0CG00-1AA0<br>(64 MB)                    | <b>V2.06.02</b><br>6SL3054-0CG01-1AA0<br>(64 MB)                 |
| <b>V4.2 SP2<br/>V4.2 SP1<br/>und<br/>V4.2</b><br>6ES7864-1CC42-0YA5     | 6ES7315-6TG10-0AB0<br>HW: 02<br>or<br>6ES7315-6TH13-0AB0<br>HW: 01  | 6ES7317-6TJ10-0AB0<br>HW: 02<br>or<br>6ES7317-6TK13-0AB0<br>HW: 01  | 6SL3040-0MA00-0AA1   | <b>V2.06.02</b><br>6SL3054-0CG00-1AA0<br>(64 MB)                    | <b>V2.06.02</b><br>6SL3054-0CG01-1AA0<br>(64 MB)                 |
| <b>V4.1 SP1</b><br>6ES7864-1CC41-0YX0                                   | 6ES7315-6TG10-0AB0<br>HW: 02<br>or<br>6ES7315-6TH13-0AB0<br>HW: 01  | 6ES7317-6TJ10-0AB0<br>HW: 02<br>or<br>6ES7317-6TK13-0AB0<br>HW: 01  | 6SL3040-0MA00-0AA1   | <b>V2.06.01</b><br>6SL3054-0CG00-1AA0<br>(64 MB)                    | <b>V2.06.01</b><br>6SL3054-0CG01-1AA0<br>(64 MB)                 |
| <b>V4.1</b><br>6ES7864-1CC41-0YX0                                       | 6ES7315-6TG10-0AB0<br>HW: 02<br>or<br>6ES7315-6TH13-0AB0<br>HW: 01  | 6ES7317-6TJ10-0AB0<br>HW: 02<br>or<br>6ES7317-6TK13-0AB0<br>HW: 01  | 6SL3040-0MA00-0AA1   | <b>V2.05</b><br>6SL3054-0CF00-1AA0<br>(64 MB)                       | <b>V2.05</b><br>6SL3054-0CF01-1AA0<br>(64 MB)                    |
| <b>V3.0 SP2</b><br>6ES7864-1CC30-0YX0                                   | 6ES7315-6TG10-0AB0<br>HW: 02  | 6ES7317-6TJ10-0AB0<br>HW: 02  | 6SL3040-0MA00-0AA1   | <b>V2.04</b><br>6SL3054-0CE00-1AA0<br>(64 MB)                       | <b>V2.04</b><br>6SL3054-0CE01-1AA0<br>(64 MB)                    |



## 2 Compatibility Overview

### 2.1 Standard Technology CPUs

| Version of the optional package S7-Technology | CPU 315T                     | CPU 317T                     | SINAMICS S120 Control Unit CU 320 (without CF-Card and firmware) | SINAMICS S120 CF-Card with firmware (without performance-expansion) | SINAMICS S120 CF-Card with firmware (with performance-expansion) |
|---|------------------------------|------------------------------|--|---|--|
| <b>V3.0 SP1</b><br>6ES7864-1CC30-0YX0         | 6ES7315-6TG10-0AB0<br>HW: 02 | 6ES7317-6TJ10-0AB0<br>HW: 02 | 6SL3040-0MA00-0AA1   | <b>V2.03</b><br>6SL3054-0CD00-1AA0<br>(32 MB)                       | <b>V2.03</b><br>6SL3054-0CD01-1AA0<br>(32 MB)                    |
| <b>V3.0</b><br>6ES7864-1CC30-0YX0             | 6ES7315-6TG10-0AB0<br>HW: 02 | 6ES7317-6TJ10-0AB0<br>HW: 02 | 6SL3040-0MA00-0AA1   | <b>V2.03</b><br>6SL3054-0CD00-1AA0<br>(32 MB)                       | <b>V2.03</b><br>6SL3054-0CD01-1AA0<br>(32 MB)                    |
| <b>V2.0 SP1</b><br>6ES7864-1CC20-0YX0         | 6ES7315-6TG10-0AB0<br>HW: 02 | 6ES7317-6TJ10-0AB0<br>HW: 02 | 6SL3040-0MA00-0AA1   | <b>V2.02</b><br>6SL3054-0CC00-1AA0<br>(16 MB)                       | <b>V2.02</b><br>6SL3054-0CC01-1AA0<br>(16 MB)                    |
| <b>V2.0</b><br>6ES7864-1CC20-0YX0             | 6ES7315-6TG10-0AB0<br>HW: 02 | 6ES7317-6TJ10-0AB0<br>HW: 02 | 6SL3040-0MA00-0AA0<br>or<br>6SL3040-0MA00-0AA1                   | <b>V2.01</b><br>6SL3054-0CB00-1AA0<br>(16 MB)                       | <b>V2.01</b><br>6SL3054-0CB01-1AA0<br>(16 MB)                    |
| <b>V1.0</b><br>6ES7864-1CC10-0YX0             | ---                          | 6ES7315-6TG10-0AB0<br>HW: 01 | 6SL3040-0MA00-0AA0<br>or<br>6SL3040-0MA00-0AA1                   | ---   | ---  |

## 2.1.2 SINAMICS S120 with CU320-2

The SINAMICS Control Unit CU320-2 DP (MLFB: 6SL3040-1MA00-0AA0) can be used with S7-Technology V4.2 (or higher).

Table 2-2 Compatibility an article number list for S7-Technology

| Version of the optional package S7-Technology | CPU 315T  | CPU 317T  | SINAMICS S120 Control Unit CU 320-2 (without CF-Card and Firmware) | SINAMICS S120 CF-Card with firmware (without Performance-expansion) | SINAMICS S120 CF-Card with firmware (with Performance-expansion) |
|---|---|---|--|---|--|
| <b>V4.2 SP5</b><br>6ES7864-1CC42-0YA5         | <b>CPU315T-3 DP/PN:</b><br>6ES7315-7TJ10-0AB0<br>HW: 01<br><br><b>CPU315T-2 DP:</b><br>6ES7315-6TG10-0AB0<br>HW: 02<br>or<br>6ES7315-6TH13-0AB0<br>HW: 01 | <b>CPU317T-3 DP/PN:</b><br>6ES7317-7TK10-0AB0<br>HW: 01<br><br><b>CPU317T-2 DP:</b><br>6ES7317-6TJ10-0AB0<br>HW: 02<br>or<br>6ES7317-6TK13-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0   | <b>V4.08.x</b><br>6SL3054-0EJ00-1BA0<br>(1 GB)                      | <b>V4.08.x</b><br>6SL3054-0EJ01-1BA0<br>(1 GB)                   |
| <b>V4.2 SP4</b><br>6ES7864-1CC42-0YA5         | <b>CPU315T-3 DP/PN:</b><br>6ES7315-7TJ10-0AB0<br>HW: 01<br><br><b>CPU315T-2 DP:</b><br>6ES7315-6TG10-0AB0<br>HW: 02<br>or<br>6ES7315-6TH13-0AB0<br>HW: 01 | <b>CPU317T-3 DP/PN:</b><br>6ES7317-7TK10-0AB0<br>HW: 01<br><br><b>CPU317T-2 DP:</b><br>6ES7317-6TJ10-0AB0<br>HW: 02<br>or<br>6ES7317-6TK13-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0   | <b>V4.07.x</b><br>6SL3054-0EH00-1BA0<br>(1 GB)                      | <b>V4.07.x</b><br>6SL3054-0EH01-1BA0<br>(1 GB)                   |
| <b>V4.2 SP3</b><br>6ES7864-1CC42-0YA5         | <b>CPU315T-3 DP/PN:</b><br>6ES7315-7TJ10-0AB0<br>HW: 01<br><br><b>CPU315T-2 DP:</b><br>6ES7315-6TG10-0AB0<br>HW: 02<br>or<br>6ES7315-6TH13-0AB0<br>HW: 01 | <b>CPU317T-3 DP/PN:</b><br>6ES7317-7TK10-0AB0<br>HW: 01<br><br><b>CPU317T-2 DP:</b><br>6ES7317-6TJ10-0AB0<br>HW: 02<br>or<br>6ES7317-6TK13-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0   | <b>V4.06.x</b><br>6SL3054-0EG00-1BA0<br>(1 GB)                      | <b>V4.06.x</b><br>6SL3054-0EG01-1BA0<br>(1 GB)                   |
| <b>V4.2 SP2</b><br>6ES7864-1CC42-0YA5         | 6ES7315-6TH13-0AB0<br>HW: 01  | 6ES7317-6TK13-0AB0<br>HW: 01  | 6SL3040-1MA00-0AA0   | <b>V4.05.x</b><br>6SL3054-0EF00-1BA0<br>(1 GB)                      | <b>V4.05.x</b><br>6SL3054-0EF01-1BA0<br>(1 GB)                   |

## 2 Compatibility Overview

### 2.1 Standard Technology CPUs

|                                       |                              |                              |                    |  |  |
|---------------------------------------|------------------------------|------------------------------|--------------------|--|--|
| <b>V4.2 SP1</b><br>6ES7864-1CC42-0YA5 | 6ES7315-6TH13-0AB0<br>HW: 01 | 6ES7317-6TK13-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0 | <b>V4.04.x</b><br>6SL3054-0EE00-1BA0<br>(1 GB) | <b>V4.04.x</b><br>6SL3054-0EE01-1BA0<br>(1 GB) |
| <b>V4.2</b><br>6ES7864-1CC42-0YA5     | 6ES7315-6TH13-0AB0<br>HW: 01 | 6ES7317-6TK13-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0 | <b>V4.03.x</b><br>6SL3054-0ED00-1BA0<br>(1 GB) | <b>V4.03.x</b><br>6SL3054-0ED01-1BA0<br>(1 GB) |

#### 2.1.3 SINAMICS G120 with CU250S-2

The SINAMICS Control Units CU250S-2 DP und CU250S-2 PN can be used with S7-Technology V4.2 SP4 (or higher).

Table 2-3 Compatibility an article number list for S7-Technology

| Version of the optional package S7-Technology            | CPU 315T  | CPU 317T  | SINAMICS G120 Control Unit CU 250S-2 DP | SINAMICS G120 Control Unit CU 250S-2 PN |
|--|---|---|---|---|
| <b>V4.2 SP5</b><br><b>V4.2 SP4</b><br>6ES7864-1CC42-0YA5 | <b>CPU315T-3 DP/PN:</b><br>6ES7315-7TJ10-0AB0<br>HW: 01<br><br><b>CPU315T-2 DP:</b><br>6ES7315-6TG10-0AB0<br>HW: 02<br>oder<br>6ES7315-6TH13-0AB0<br>HW: 01 | <b>CPU317T-3 DP/PN:</b><br>6ES7317-7TK10-0AB0<br>HW: 01<br><br><b>CPU317T-2 DP:</b><br>6ES7317-6TJ10-0AB0<br>HW: 02<br>oder<br>6ES7317-6TK13-0AB0<br>HW: 01 | 6SL3246-0BA22-1PA0                      | 6SL3246-0BA22-1FA0                      |

## 2.2 Failsafe Technology CPUs

The following table shows you the MLFBs of the hardware releases and the firmware versions of the drive components, which are compatible to the version of the optional package "S7-Technology"

### 2.2.1 SINAMICS S120 with CU320

Table 2-4 Compatibility an article number list for S7-Technology

| Version of the optional package S7-Technology   | CPU 317TF                    | SINAMICS S120 Control Unit CU 320 (without CF-Card and firmware) | SINAMICS S120 CF-Card with firmware (without performance-expansion) | SINAMICS S120 CF-Card with firmware (with performance-expansion) |
|---|------------------------------|--|---|--|
| V4.2 SP5<br>V4.2 SP4<br>V4.2 SP3<br>V4.2 SP2<br>V4.2 SP1<br>and<br>V4.2<br>6ES7864-1CC42-0YA5 | 6ES7317-6TF14-0AB0<br>HW: 01 | 6SL3040-0MA00-0AA1   | V2.06.02<br>6SL3054-0CG00-1AA0<br>(64 MB)                           | V2.06.02<br>6SL3054-0CG01-1AA0<br>(64 MB)                        |

**2.2.2 SINAMICS S120 with CU320-2**

Table 2-5 Compatibility an article number list for S7-Technology

| Version of the optional package S7 Technology | CPU 317TF                    | SINAMICS S120 Control Unit CU 320-2 (without CF-Card and firmware) | SINAMICS S120 CF-Card with firmware (without performance-expansion) | SINAMICS S120 CF-Card with firmware (with performance-expansion) |
|---|------------------------------|--|---|--|
| <b>V4.2 SP5</b><br>6ES7864-1CC42-0YA5         | 6ES7317-6TF14-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0   | <b>V4.08.x</b><br>6SL3054-0EJ00-1BA0<br>(1 GB)                      | <b>V4.08.x</b><br>6SL3054-0EJ01-1BA0<br>(1 GB)                   |
| <b>V4.2 SP4</b><br>6ES7864-1CC42-0YA5         | 6ES7317-6TF14-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0   | <b>V4.07.x</b><br>6SL3054-0EH00-1BA0<br>(1 GB)                      | <b>V4.07.x</b><br>6SL3054-0EH01-1BA0<br>(1 GB)                   |
| <b>V4.2 SP3</b><br>6ES7864-1CC42-0YA5         | 6ES7317-6TF14-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0   | <b>V4.06.x</b><br>6SL3054-0EG00-1BA0<br>(1 GB)                      | <b>V4.06.x</b><br>6SL3054-0EG01-1BA0<br>(1 GB)                   |
| <b>V4.2 SP2</b><br>6ES7864-1CC42-0YA5         | 6ES7317-6TF14-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0   | <b>V4.05.x</b><br>6SL3054-0EF00-1BA0<br>(1 GB)                      | <b>V4.05.x</b><br>6SL3054-0EF01-1BA0<br>(1 GB)                   |
| <b>V4.2 SP1</b><br>6ES7864-1CC42-0YA5         | 6ES7317-6TF14-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0   | <b>V4.04.x</b><br>6SL3054-0EE00-1BA0<br>(1 GB)                      | <b>V4.04.x</b><br>6SL3054-0EE01-1BA0<br>(1 GB)                   |
| <b>V4.2</b><br>6ES7864-1CC42-0YA5             | 6ES7317-6TF14-0AB0<br>HW: 01 | 6SL3040-1MA00-0AA0   | <b>V4.03.x</b><br>6SL3054-0ED00-1BA0<br>(1 GB)                      | <b>V4.03.x</b><br>6SL3054-0ED01-1BA0<br>(1 GB)                   |

**2.2.3 SINAMICS G120 with CU250S-2**

The SINAMICS Control Units CU250S-2 DP und CU250S-2 PN can be used with S7-Technology V4.2 SP4 (or higher).

Table 2-6 Compatibility an article number list for S7-Technology

| Version of the optional package S7 Technology            | CPU 317TF                    | SINAMICS G120 Control Unit CU 250S-2 DP | SINAMICS G120 Control Unit CU 250S-2 PN |
|--|------------------------------|---|---|
| <b>V4.2 SP5</b><br><b>V4.2 SP4</b><br>6ES7864-1CC42-0YA5 | 6ES7317-6TF14-0AB0<br>HW: 01 | 6SL3246-0BA22-1PA0                      | 6SL3246-0BA22-1FA0                      |

## 3 Short Description of the Versions

### 3.1 S7-Technology V4.2 SP5

#### 3.1.1 With this version usable Technology-CPU

This version of the optional package "S7 Technology" can be used with the following Technology-CPU:

- Technology CPU 315T-3 PN/DP
  - 6ES7315-7TJ10-0AB0 with 384 kByte working memory
- Technology CPU 317T-3 PN/DP
  - 6ES7317-7TK10-0AB0 with 1024 kByte working memory
- Technology CPU 317TF-3 PN/DP
  - 6ES7317-7UL10-0AB0 with 1536 kByte working memory

#### Note

The following Technology CPUs are also supported, but are in phase out state (see [4](#)):

- Technology -CPU 315T-2 DP
  - 6ES7315-6TH13-0AB0 with 256 kByte working memory
  - 6ES7315-6TG10-0AB0 with 128 kByte working memory
- Technology -CPU 317T-2 DP
  - 6ES7317-6TK13-0AB0 with 1024 kByte working memory
  - 6ES7317-6TJ10-0AB0 with 512 kByte working memory
- Technology -CPU 317TF-2 DP
  - 6ES7317-6TF14-0AB0 with 1536 kByte working memory

#### 3.1.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.6 (or higher)

For the Safety functions of the failsafe Technology CPU the following Software packages are required:

- Distributed Safety V5.4 SP5 (or higher)
- S7-F Configuration Pack V5.5 SP13 (or higher)

This version of the optional package "S7 Technology" only runs together with the following release of operating systems:

- Windows 10 Pro and Enterprise (64 Bit)
- Windows 7 Ultimate, Professional and Enterprise (64 Bit) with SP1

#### Note

All operating systems require the Microsoft Internet Explorer 6.0 (or higher).



#### 3.1.3 Compatibility

- S7 Technology V4.2 SP5 is fully upwardly compatible with S7 Technology V4.x and V3.0, i.e. programs and projects created with these versions can be further processed after conversion with S7 Technology V4.2 SP5.
- S7 Technology V4.2 SP5 is also reverse compatible with these versions under the condition that no components and functions are used in a V4.2 SP5 project that are not supported by the older Version of Technology, e.g. new CPUs or new functions.

#### 3.1.4 Highlights of this Version

S7 Technology V4.2 SP5 features the following additions and changes

- For the first time, S7 Technology can be installed on PCs with the Windows 10 operating system.
- SP5 for S7 Technology V4.2 supports the new STARTER version V4.5 SP1 drives.

The following drives are supported (new added versions are bolt):

- MICROMASTER 4. Generation
- SINAMICS DCM with Firmware V1.1, V1.2 , V1.3, V1.4 and (with SSP) V1.4.1
- **SINAMICS DCP with Firmware V1.1 and (with SSP) V1.2**
- SIMATIC ET200S FC with Firmware V1.0.x and V3.0.x
- SIMATIC ET200pro FC with Firmware V3.0.x, V3.1.x
- SIMATIC ET200pro FC-2 with Firmware V4.7.3 and **(with SSP) V4.7.6**
- SINAMICS G110 with Firmware V1.0.x, V1.1.x and V1.2.x
- SINAMICS G110D with Firmware V3.3.x, V3.4.x and V3.6.x
- SINAMICS G110M with Firmware V4.6.x, V4.7, V4.7.3 and **(with SSP) V4.7.6**
- SINAMICS G120 with Firmware V2.0.x, V2.1.x, V3.0.x, V3.1.x, V3.2.x, V4.2, V4.3.0, V4.3.2, V4.4, V4.5, V4.6, V4.7, V4.7.3 and (with SSP) V4.7.6
- SINAMICS G120C with Firmware V4.4, V4.5, V4.6, V4.7, V4.7.3 and **(with SSP) V4.7.6**
- SINAMICS G120D with Firmware V3.0.x, V3.1.x, V3.2.x, V4.5, V4.6, V4.7, V4.7.3 and **(with SSP) V4.7.6**
- SINAMICS G120P with Firmware V4.2, V4.3.0, V4.3.2, V4.4, V4.5, V4.6, V4.7, V4.7.3 and (with SSP) V4.7.6
- SINAMICS G120P BT with Firmware V4.4.1, V4.6, V4.7, V4.7.3 and **(with SSP) V4.7.6**
- SINAMICS G130 with Firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G130 with Firmware V4.3.1, V4.3.2, V4.4, V4.5, V4.6, V4.7 and **(with SSP) V4.8**
- SINAMICS G150 with Firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G150 with Firmware V4.3.1, V4.3.2, V4.4, V4.5, V4.6, V4.7 and **(with SSP) V4.8**

#### 3.1 S7-Technology V4.2 SP5

- SINAMICS GM150 with Firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GM150 with Firmware V4.3.1, V4.4.2 and V4.5
- SINAMICS GL150 with Firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GL150 with Firmware V4.3.1, V4.4.2 and V4.5
- SINAMICS S110 with Firmware V4.1, V4.3.1, V4.3.2, V4.4 and (with SSP) V4.4.3
- SINAMICS S120 with Firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S120 with Firmware V4.3.1, V4.3.2, V4.4, V4.5, V4.6, V4.7 and **(with SSP) V4.8**
- SINAMICS SM120 with Firmware V4.4.2
- SINAMICS S150 with Firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S150 with Firmware V4.3.1, V4.3.2, V4.4, V4.5, V4.6, V4.7 and **(with SSP) V4.8**
- SINAMICS SL150 with Firmware V4.3.1, V4.4.2 and V4.5
- SINAMICS MV with Firmware V4.6, V4.7, V4.7.4 and (with SSP) V4.7.5

#### 3.1.5 Licensing of S7-Technology

As from S7 Technology V4.2, one license is required to configure the Technology.

- Floating License: The software can be installed on any number of units within one company. For each license only one user may work with the software at any time. Use of the software begins when the software is started and ends when the software is closed.
- Trial License: Permits installation of the software; its use is limited to 14 days. The software may only be used for testing and evaluation purposes.

## 3.2 S7-Technology V4.2 SP4

### 3.2.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

- Technology CPU 315T-3 PN/DP
  - 6ES7315-7TJ10-0AB0 with 384 kByte working memory
- Technology CPU 317T-3 PN/DP
  - 6ES7317-7TK10-0AB0 with 1024 kByte working memory
- Technology CPU 317TF-3 PN/DP
  - 6ES7317-7UL10-0AB0 with 1536 kByte working memory

#### Note

The following Technology CPUs are also supported, but are in phase out state (see [4](#)):

- Technology -CPU 315T-2 DP
  - 6ES7315-6TH13-0AB0 with 256 kByte working memory
  - 6ES7315-6TG10-0AB0 with 128 kByte working memory
- Technology -CPU 317T-2 DP
  - 6ES7317-6TK13-0AB0 with 1024 kByte working memory
  - 6ES7317-6TJ10-0AB0 with 512 kByte working memory
- Technology -CPU 317TF-2 DP
  - 6ES7317-6TF14-0AB0 with 1536 kByte working memory

### 3.2.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.5 SP4 (or higher)

For the Safety functions of the failsafe Technology CPU the following Software packages are required:

- Distributed Safety V5.4 SP5 (or higher)
- S7-F Configuration Pack V5.5 SP11 (or higher)

This version of the optional package "S7 Technology" only runs together with the following release of operating systems:

- Microsoft Windows XP Professional SP3
- Windows 7 Ultimate 32bit
- Windows 7 Ultimate 64bit
- Windows 7 Professional 32bit
- Windows 7 Professional 64bit
- Windows 7 Enterprise 32bit

### 3.2 S7-Technology V4.2 SP4

- Windows 7 Enterprise 64bit

#### Note

All operating systems require the Microsoft Internet Explorer 6.0 (or higher).

### 3.2.3 Compatibility

- S7 Technology V4.2 SP4 is fully upwardly compatible with S7 Technology V4.x and V3.0, i.e. programs and projects created with these versions can be further processed after conversion with S7 Technology V4.2 SP4.
- S7 Technology V4.2 SP4 is also reverse compatible with these versions under the condition that no components and functions are used in a V4.2 SP4 project that are not supported by the older Version of Technology, e.g. new CPUs or new functions.

### 3.2.4 Highlights of this Version

S7 Technology V4.2 SP4 features the following additions and changes

- STARTER V4.4
- Parallel installation with SCOUT TIA V4.4 possible
- Routing to G120 drives with FW V4.7 possible
- TO Alarm Output viewable and configurable
- Support of G120 CU250-2

The following drives are supported (new added versions are bold):

- MICROMASTER 4. Generation
- SINAMICS DCM with Firmware V1.1, V1.2 , V1.3 and **V1.4**
- SIMATIC ET200S FC with Firmware V1.0.x and V3.0.x
- SIMATIC ET200pro FC with Firmware V3.0.x, **V3.1.x and V4.7.x**
- SINAMICS G110 with Firmware V1.0.x, V1.1.x and **V1.2.x**
- SINAMICS G110D with Firmware V3.3.x and V3.4
- **SINAMICS G110M with Firmware V4.6.x and V4.7.x**
- SINAMICS G120 with Firmware V2.0.x, V2.1.x, V3.0.x, V3.1.x, V3.2.x, V4.2,V4.3.0, V4.3.2, V4.4, V4.5, V4.6 and **V4.7**
- SINAMICS G120C with Firmware V4.4, V4.5, V4.6 and **V4.7**
- SINAMICS G120D with Firmware V3.0.x, V3.1.x, V3.2.x, V4.5, V4.6 and **V4.7**
- SINAMICS G120P with Firmware V4.2, V4.3, V4.3.2, V4.4, V4.5, V4.6 and **V4.7**
- SINAMICS G120P BT with Firmware V4.4.1, V4.6 and **V4.7**
- SINAMICS G130 with Firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G130 with Firmware V4.3.1, V4.3.2, V4.4, V4.5, V4.6 and **V4.7**
- SINAMICS G150 with Firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G150 with Firmware V4.3.1, V4.3.2, V4.4, V4.5, V4.6 and **V4.7**

#### 3.2 S7-Technology V4.2 SP4

- SINAMICS GM150 with Firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GM150 with Firmware V4.3.1, V4.4.2 and V4.5
- SINAMICS GL150 with Firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GL150 with Firmware V4.3.1, V4.4.2 and V4.5
- SINAMICS S110 with Firmware V4.1, V4.3.1, V4.3.2 and V4.4
- SINAMICS S120 with Firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S120 with Firmware V4.3.1, V4.3.2, V4.4, V4.5, V4.6 and **V4.7**
- SINAMICS SM120 with Firmware V4.4.2
- SINAMICS S150 with Firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S150 with Firmware V4.3.1, V4.3.2, V4.4, V4.5, V4.6 and **V4.7**
- SINAMICS SL150 with Firmware V4.3.1, V4.4.2 and V4.5
- SINAMICS MV with Firmware V4.5, V4.6 and **V4.7**

#### 3.2.5 Licensing of S7-Technology

As from S7 Technology V4.2, one license is required to configure the Technology.

- Floating License: The software can be installed on any number of units within one company. For each license only one user may work with the software at any time. Use of the software begins when the software is started and ends when the software is closed.
- Trial License: Permits installation of the software; its use is limited to 14 days. The software may only be used for testing and evaluation purposes.

## 3.3 S7-Technology V4.2 SP3

### 3.3.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

#### PROFINET:

- Technology CPU 315T-3 PN/DP
  - 6ES7315-7TJ10-0AB0 with 384 kByte working memory
- Technology CPU 317T-3 PN/DP
  - 6ES7317-7TK10-0AB0 with 1024 kByte working memory
- Technology CPU 317TF-3 PN/DP
  - 6ES7317-7UL10-0AB0 with 1536 kByte working memory

#### PROFIBUS:

- Technology CPU 315T-2 DP
  - 6ES7315-6TH13-0AB0 with 256 kByte working memory
  - 6ES7315-6TG10-0AB0 with 128 kByte working memory
- Technology CPU 317T-2 DP
  - 6ES7317-6TK13-0AB0 with 1024 kByte working memory
  - 6ES7317-6TJ10-0AB0 with 512 kByte working memory
- Technology CPU 317TF-2 DP
  - 6ES7317-6TF14-0AB0 with 1536 kByte working memory

### 3.3.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.5 SP2 (or higher)

For the Safety functions of the failsafe Technology CPU the following Software packages are required:

- Distributed Safety V5.4 SP5 (or higher)
- S7-F Configuration Pack V5.5 SP10 (or higher)

This version of the optional package "S7 Technology" only runs together with the following release of operating systems:

- Microsoft Windows XP Professional SP3
- Windows 7 Ultimate 32bit
- Windows 7 Ultimate 64bit
- Windows 7 Professional 32bit
- Windows 7 Professional 64bit
- Windows 7 Enterprise 32bit
- Windows 7 Enterprise 64bit



**Note**

All operating systems require the Microsoft Internet Explorer 6.0 (or higher).

#### 3.3.3 Compatibility

- S7 Technology V4.2 SP3 is fully upwardly compatible with S7 Technology V4.x and V3.0, i.e. programs and projects created with these versions can be further processed after conversion with S7 Technology V4.2 SP3.
- S7 Technology V4.2 SP3 is also reverse compatible with these versions under the condition that no components and functions are used in a V4.2 SP3 project that are not supported by S7 Technology V3.0, e.g. new CPUs or new functions.

#### 3.3.4 Highlights of this Version

S7 Technology V4.2 SP3 features the following additions and changes

- Support of the new Technology CPUs with PROFINET interface
  - Technologie-CPU 315T-3 PN/DP (6ES7315-7TJ10-0AB0)
  - Technologie-CPU 317T-3 PN/DP (6ES7317-7TK10-0AB0)
  - Technologie-CPU 317TF-3 PN/DP (6ES7317-7UL10-0AB0)
- STARTER V4.3.1.5

The following drives are supported by STARTER 4.3.1.5 (new added versions are bolt):

- MICROMASTER 4. Generation
- SINAMICS DCM with firmware V1.1, V1.2 and V1.3
- SIMATIC ET200S FC with firmware V1.0.x and V3.0.x
- SIMATIC ET200pro FC with firmware V3.0.x
- SINAMICS G110 with firmware V1.0.x and V1.1.x
- SINAMICS G110D with firmware V3.3.x and V3.4
- SINAMICS G120 with firmware V2.0.x, V2.1.x, V3.0.x, V3.1.x, V3.2.x, V4.2, V4.3.0, V4.3.2, V4.4, V4.5 and **V4.6**
- SINAMICS G120C with firmware V4.4, V4.5 and **V4.6**
- SINAMICS G120D with firmware V3.0.x, V3.1.x, V3.2.x, V4.5 and **V4.6**
- SINAMICS G120P with firmware V4.2, V4.3, V4.3.2, V4.4, V4.5 and **V4.6**
- SINAMICS G120P BT with firmware V4.4.1
- SINAMICS G130 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G130 with firmware V4.3.1, V4.3.2, V4.4, V4.5 and **V4.6**
- SINAMICS G150 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G150 with firmware V4.3.1, V4.3.2, V4.4, V4.5 and **V4.6**

#### 3.3 S7-Technology V4.2 SP3

- SINAMICS GM150 with firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GM150 with firmware V4.3.1, V4.4.2 and V4.5
- SINAMICS GL150 with firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GL150 with firmware V4.3.1, V4.4.2 and V4.5
- SINAMICS S110 with firmware V4.1, V4.3.1, V4.3.2 and V4.4
- SINAMICS S120 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S120 with firmware V4.3.1, V4.3.2, V4.4, V4.5 and **V4.6**
- SINAMICS SM120 with firmware V4.4.2
- SINAMICS S150 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S150 with firmware V4.3.1, V4.3.2, V4.4, V4.5 and **V4.6**
- SINAMICS SL150 with firmware V4.3.1, V4.4.2 and V4.5
- SINAMICS **MV** with firmware V4.5 and **V4.6**

#### 3.3.5 Licensing of S7-Technology

As from S7 Technology V4.2, one license is required to configure the Technology.

- Floating License: The software can be installed on any number of units within one company. For each license only one user may work with the software at any time. Use of the software begins when the software is started and ends when the software is closed.
- Trial License: Permits installation of the software; its use is limited to 14 days. The software may only be used for testing and evaluation purposes.

## 3.4 S7-Technology V4.2 SP2

### 3.4.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

- Technology CPU 315T-2 DP
  - 6ES7315-6TH13-0AB0 with 256 kByte working memory
  - 6ES7315-6TG10-0AB0 with 128 kByte working memory
- Technology CPU 317T-2 DP
  - 6ES7317-6TK13-0AB0 with 1024 kByte working memory
  - 6ES7317-6TJ10-0AB0 with 512 kByte working memory
- Technology-CPU 317TF-2 DP
  - 6ES7317-6TF14-0AB0 with 1536 kByte working memory

### 3.4.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.5 SP2 (or higher)

For the Safety functions of the CPU 317TF-2 DP the following Software package are required:

- Distributed Safety V5.4 SP5 (or higher)
- S7-F Configuration Pack V5.5 SP7 (or higher)  
recommended: V5.5 SP9 Update 1 (or higher)

This version of the optional package "S7 Technology" only runs together with the following release of operating systems:

- Microsoft Windows XP Professional SP3
- Windows 7 Ultimate 32bit
- Windows 7 Ultimate 64bit
- Windows 7 Professional 32bit
- Windows 7 Professional 64bit
- Windows 7 Enterprise 32bit
- Windows 7 Enterprise 64bit

**Note** All operating systems require the Microsoft Internet Explorer 6.0 (or higher).

#### 3.4.3 Compatibility

- S7 Technology V4.2 SP2 is fully upwardly compatible with S7 Technology V4.x and V3.0, i.e. programs and projects created with these versions can be further processed after conversion with S7 Technology V4.2 SP2.
- S7 Technology V4.2 SP2 is also reverse compatible with these versions under the condition that no components and functions are used in a V4.2 SP2 project that are not supported by S7 Technology V3.0, e.g. new CPUs or new functions.

#### 3.4.4 Highlights of this Version

S7 Technology V4.2 SP2 features the following additions and changes

- Windows 7 support (64 Bit)
- STARTER V4.3.1

The following drives are supported by STARTER 4.3.1 (new added versions are bolt):

- MICROMASTER 4. Generation
- SINAMICS DCM with firmware V1.1, V1.2 and **V1.3**
- SIMATIC ET200S FC with firmware V1.0.x and V3.0.x
- SIMATIC ET200pro FC with firmware V3.0.x
- SINAMICS G110 with firmware V1.0.x and V1.1.x
- SINAMICS G110D with firmware V3.3.x and V3.4
- SINAMICS G120 with firmware V2.0.x, V2.1.x, V3.0.x, V3.1.x, V3.2.x, V4.2, V4.3.0, V4.3.2, V4.4 and **V4.5**
- SINAMICS G120C with firmware V4.4 and **V4.5**
- SINAMICS G120D with firmware V3.0.x, V3.1.x, V3.2.x and **V4.5**
- SINAMICS **G120P** with firmware **V4.2, V4.3, V4.3.2, V4.4 and V4.5**
- SINAMICS **G120P BT** with firmware **V4.4.1 and V4.5**
- SINAMICS G130 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G130 with firmware V4.3.1, V4.3.2, V4.4 and **V4.5**
- SINAMICS G150 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G150 with firmware V4.3.1, V4.3.2, V4.4 and **V4.5**
- SINAMICS GM150 with firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GM150 with firmware V4.3.1, **V4.4.2 and V4.5**
- SINAMICS GL150 with firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GL150 with firmware V4.3.1, **V4.4.2 and V4.5**
- SINAMICS S110 with firmware V4.1, V4.3.1, V4.3.2 and V4.4
- SINAMICS S120 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S120 with firmware V4.3.1, V4.3.2, V4.4 and **V4.5**

#### 3.4 S7-Technology V4.2 SP2

- SINAMICS S150 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S150 with firmware V4.3.1, V4.3.2, V4.4 and **V4.5**
- SINAMICS SL150 with firmware V4.3.1, **V4.4.2** and **V4.5**
- SINAMICS **MV** with firmware **V4.5**

#### 3.4.5 Licensing of S7-Technology

As from S7 Technology V4.2, one license is required to configure the Technology.

- Floating License: The software can be installed on any number of units within one company. For each license only one user may work with the software at any time. Use of the software begins when the software is started and ends when the software is closed.
- Trial License: Permits installation of the software; its use is limited to 14 days. The software may only be used for testing and evaluation purposes.

## 3.5 S7-Technology V4.2 SP1

### 3.5.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

- Technology CPU 315T-2 DP
  - 6ES7315-6TH13-0AB0 with 256 kByte working memory
  - 6ES7315-6TG10-0AB0 with 128 kByte working memory
- Technology CPU 317T-2 DP
  - 6ES7317-6TK13-0AB0 with 1024 kByte working memory
  - 6ES7317-6TJ10-0AB0 with 512 kByte working memory
- Technology-CPU 317TF-2 DP
  - 6ES7317-6TF14-0AB0 with 1536 kByte working memory

### 3.5.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.5 SP1 (or higher)

For the Safety functions of the CPU 317TF-2 DP the following Software package are required:

- Distributed Safety V5.4 SP5 (or higher)
- S7-F Configuration Pack V5.5 SP7 (or higher)  
recommended: V5.5 SP9 (or higher)

This version of the optional package "S7 Technology" only runs together with the following release of operating systems:

- Microsoft Windows XP Professional SP3
- Windows 7 Ultimate 32bit
- Windows 7 Ultimate N 32bit
- Windows 7 Professional 32bit
- Windows 7 Professional N 32bit

Execution of S7-Technology V4.2 on the following operating systems cannot be guaranteed; its use is at own risk:

- Windows Vista Ultimate (SP1 or higher)
- Windows Vista Enterprise (SP1 or higher)
- Windows Vista Business (SP1 or higher)
- Windows Vista Business N (SP1 or higher)



|             |  |
|-------------|--|
| <b>Note</b> | All operating systems require the Microsoft Internet Explorer 6.0 (or higher). |
|-------------|--|

#### 3.5.3 Compatibility

S7 Technology V4.2 SP1 is fully upwardly compatible with S7 Technology V4.x and V3.0, i.e. programs and projects created with these versions can be further processed after conversion with S7 Technology V4.2 SP1.

S7 Technology V4.2 SP1 is also reverse compatible with these versions under the condition that no components and functions are used in a V4.2 SP1 project that are not supported by S7 Technology V3.0, e.g. new CPUs or new functions.

#### 3.5.4 Highlights of this Version

S7 Technology V4.2 SP1 will support the following new functions:

- New axis assistant and new axis configuration
- Enhanced configuration of path objects
- Object comparison
- Signal flow diagrams to represent the controller structures
- Address list for diagnosing I/O data on DP(DRIVE)
- Windows 7 support (32 Bit)
- STARTER 4.2.1
- STARTER functionality with alternative access points
- Safety acceptance protocol in STARTER

The following drives are supported by STARTER 4.2.1 (new added versions are bold):

- MICROMASTER 4th generation
- SINAMICS DCM with firmware (with SSP) V1.1 and V1.2
- SIMATIC ET200S FC with firmware V1.0.x and V3.0.x
- SIMATIC ET200pro FC with firmware V3.0.x
- SINAMICS G110 with firmware V1.0.x and V1.1.x
- SINAMICS G110D with firmware V3.3.x and **V3.4**
- SINAMICS G120 with firmware V2.0.x, V2.1.x, V3.0.x, V3.1.x, V3.2.x, V4.2, V4.3.0, V4.3.2 and **V4.4**
- SINAMICS **G120C** with firmware **V4.4**
- SINAMICS G120D with firmware V3.0.x, V3.1.x, V3.2.x
- SINAMICS G130 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G130 with firmware V4.3.1, V4.3.2 and **V4.4**
- SINAMICS G150 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G150 with firmware V4.3.1, V4.3.2 and **V4.4**
- SINAMICS GM150 with firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GM150 with firmware V4.3.1 and **V4.4**

#### 3.5 S7-Technology V4.2 SP1

- SINAMICS GL150 with firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GL150 with firmware V4.3.1 and **V4.4**
- SINAMICS S110 with firmware V4.1, V4.3.1, V4.3.2 and **V4.4**
- SINAMICS S120 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S120 with firmware V4.3.1, V4.3.2 and **V4.4**
- SINAMICS S150 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S150 with firmware V4.3.1, V4.3.2 and **V4.4**
- SINAMICS SL150 with firmware V4.3.1 and **V4.4**
- SINAMICS **SM150** with firmware **V4.4**

#### 3.5.5 Licensing of S7-Technology

As from S7-Technology V4.2, one license is required to configure the Technology.

- Floating License: The software can be installed on any number of units within one company. For each license only one user may work with the software at any time. Use of the software begins when the software is started and ends when the software is closed.
- Trial License: Permits installation of the software; its use is limited to 14 days. The software may only be used for testing and evaluation purposes.

## 3.6 S7-Technology V4.2

### 3.6.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

- Technology CPU 315T-2 DP
  - 6ES7315-6TH13-0AB0 with 256 kByte working memory
  - 6ES7315-6TG10-0AB0 with 128 kByte working memory
- Technology CPU 317T-2 DP
  - 6ES7317-6TK13-0AB0 with 1024 kByte working memory
  - 6ES7317-6TJ10-0AB0 with 512 kByte working memory
- Technology-CPU 317TF-2 DP
  - 6ES7317-6TF14-0AB0 with 1536 kByte working memory

### 3.6.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.4 SP5 (und höher)

For the Safety functions of the CPU 317TF-2 DP the following Software package are required:

- Distributed Safety V5.4 SP5 (or higher)
- S7-F Configuration Pack V5.5 SP7 (or higher)

This version of the optional package "S7 Technology" only runs together with the following release of operating systems:

- Microsoft Windows XP Professional SP3

Execution of S7-Technology V4.2 on the following operating systems cannot be guaranteed; its use is at own risk:

- Windows Vista Ultimate (SP1 or higher)
- Windows Vista Enterprise (SP1 or higher)
- Windows Vista Business (SP1 or higher)
- Windows Vista Business N (SP1 or higher)
- Windows 7 Ultimate
- Windows 7 Ultimate N
- Windows 7 Professional
- Windows 7 Professional N

**Note**

All operating systems require the Microsoft Internet Explorer 6.0 (or higher). Windows 95 / 98 / Me NT and 2000 are no longer supported.

#### 3.6.3 Compatibility

S7-TECHNOLOGY V4.2 is fully upwardly compatible with S7-TECHNOLOGY V4.1, V3.0, i.e. programs and projects created with these versions can be further processed after conversion with S7-TECHNOLOGY V4.2.

S7-TECHNOLOGY V4.2 is also reverse compatible with these versions under the condition that no components and functions are used in a V4.2 project that are not supported by S7-TECHNOLOGY V3.0, e.g. new CPUs or new functions.

#### 3.6.4 Highlights of this Version

S7-TECHNOLOGY V4.2 features the following additions and changes

- SIMATIC Technology-CPU with Safety functionality (CPU317TF-2DP)
- 3-D Continuous path interpolation with the new technology object "Continuous path object"
- S7-Technology V4.2 and higher supports the following kinematics:
  - Cartesian (two and three-dimensional)
  - Roll Picker
  - Scara
  - Articulated arm
  - Delta2D Picker
  - Delta3D Picker
- S7-Technology V4.2 supports hydraulic axes with pressure valve. New function blocks are available for the control of these axes.
- The force/pressure limitation or force/pressure controller can be used for the following axes:
  - Electrical positioning, synchronized or continuous path axes
  - Hydraulic rotating axes
  - Hydraulic positioning, synchronized or continuous path axes
- The integral STARTER functionality of S7-TECHNOLOGY V4.2 corresponds to the new STARTER version V4.1.5

The following drives are supported:

- MICROMASTER 4th generation
- SINAMICS DCM with firmware (with SSP) V1.1 and V1.2
- SINAMICS G110D with firmware V3.3.x
- SINAMICS G120 with firmware V2.0.x, V2.1.x, V3.0.x, V3.1.x, V3.2.x, V4.2, V4.3.0 and V4.3.2
- SINAMICS G120D with firmware V3.0.x, V3.1.x, V3.2.x
- SINAMICS G130 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G130 with firmware V4.3.1 and V4.3.2

#### 3.6 S7-Technology V4.2

- SINAMICS G150 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS G150 with firmware V4.3.1 and V4.3.2
- SINAMICS GM150 with firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GM150 with firmware V4.3.1
- SINAMICS GL150 with firmware V2.5.1, V2.6.1 and V2.6.2
- SINAMICS GL150 with firmware V4.3.1
- SINAMICS S110 with firmware V4.1 und V4.3.1 and V4.3.2
- SINAMICS S120 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S120 with firmware V4.3.1 and V4.3.2
- SINAMICS S150 with firmware V2.1.x, V2.2.x, V2.3.x, V2.4.x, V2.5.1, V2.6.1 and V2.6.2
- SINAMICS S150 with firmware V4.3.1 and V4.3.2
- SINAMICS SL150 with firmware V4.3.1

#### 3.6.5 Licensing of S7-Technology

As from S7-Technology V4.2, one license is required to configure the Technology.

- Floating License: The software can be installed on any number of units within one company. For each license only one user may work with the software at any time. Use of the software begins when the software is started and ends when the software is closed.
- Trial License: Permits installation of the software; its use is limited to 14 days. The software may only be used for testing and evaluation purposes.

## 3.7 S7-Technology V4.1 SP1

### 3.7.1 With this version usable Technology-CPU's

This version of the optional package "S7 Technology" can be used with the following Technology-CPU's:

- Technology CPU 317T-2 DP
  - 6ES7317-6TK13-0AB0 with 1024 kByte working memory
  - 6ES7317-6TJ10-0AB0 with 512 kByte working memory
- Technology CPU 315T-2 DP
  - 6ES7315-6TH13-0AB0 with 256 kByte working memory
  - 6ES7315-6TG10-0AB0 with 128 kByte working memory

### 3.7.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.4 SP4 (or higher)

This version of the optional package "S7 Technology" only runs together with the following release of operating systems:

- Microsoft Windows XP Professional SP2

#### Note

With all operating systems Microsoft Internet Explorer 6.0 (or higher) is required. Windows 95 / 98 / Me, NT and 2000 will not be supported any more by the optional package "S7 Technology".

### 3.7.3 Compatibility

S7-TECHNOLOGY V4.1 SP1 is fully upwardly compatible with S7-TECHNOLOGY V3.0 and V2.0; i.e. programs and projects created with these versions can be further processed after conversion with S7-TECHNOLOGY V4.1 SP1.

S7-TECHNOLOGY V4.1 SP1 is also reverse compatible with these versions under the condition that no components and functions are used in a V4.1 SP1 project that are not supported by S7-TECHNOLOGY V3.0 or V2.0, e.g. new CPUs or new functions.

### 3.7.4 Highlights of this Version

- **New STARTER functionality**

The integral STARTER functionality of S7T Config now also supports DCC und SCRIPTING for the SINAMICS drive S120. The integral STARTER functionality of S7-TECHNOLOGY V4.1 SP1 is in line with the STARTER version V4.1.2

STARTER V4.1.2 supports the following drive systems:

- SINAMICS G120 V3.2
- SINAMICS S110 V4.1
- SINAMICS S120 V2.6 SP1

#### 3.7 S7-Technology V4.1 SP1

- **Support of IM 174**  
The IM 174 with order number 6ES7 174-0AA10-0AA0 is now supported.
- **Improved Online Help**  
The online Help of the IM 174 and the product information "Connection of the SINAMICS S120 to the Technology CPU" have been updated.
- **Corrections and improvements of Scout V4.1.2 were taken over**

## 3.8 S7-Technology V4.1

### 3.8.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

- Technology CPU 317T-2 DP
  - 6ES7317-6TK13-0AB0 with 1024 kByte working memory
  - 6ES7317-6TJ10-0AB0 with 512 kByte working memory
- Technology CPU 315T-2 DP
  - 6ES7315-6TH13-0AB0 with 256 kByte working memory
  - 6ES7315-6TG10-0AB0 with 128 kByte working memory

### 3.8.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.4 SP2 (or higher)

This version of the optional package "S7 Technology" only runs together with the following release of operating systems:

- Microsoft Windows XP Professional SP2

#### Note

With all operating systems Microsoft Internet Explorer 6.0 (or higher) is required. Windows 95 / 98 / Me, NT and 2000 will not be supported any more by the optional package "S7 Technology".

### 3.8.3 Compatibility

S7-TECHNOLOGY V4.1 is fully upwardly compatible with S7-TECHNOLOGY V3.0 and V2.0; i.e. programs and projects created with these versions can be further processed after conversion with S7-TECHNOLOGY V4.1.

S7-TECHNOLOGY V4.1 is also reverse compatible with these versions under the condition that no components and functions are used in a V4.1 project that are not supported by S7-TECHNOLOGY V3.0 or V2.0, e.g. new CPUs or new functions.



#### 3.8.4 Highlights of this Version

- **Flexible machine concept**  
S7-TECHNOLOGY V4.1 provides several options for flexible machine design and optimal adaptation to the operating conditions:
  - Changes to the configuration during runtime of the user program. This is done by means of technology functions provided by the S7-Technology library. No engineering system is required for this purpose. The new technology functions "MC\_ActivateTO" and "MC\_ActivateDPSlave" support enabling and disabling of technology objects and DP slaves on DP(DRIVE).
  - Enabling and disabling can alternatively be configured "off-line" in S7T Config.
- **Cam Track**  
S7-TECHNOLOGY V4.1 now supports the technology object Cam Track. The cam tracks significantly increase the no. of cams. The feature of cam tracks is that several cams can be output as a track on one output.
- **New STARTER functionality**  
The integral STARTER functionality of S7T Config now also supports firmware version V2.5.x of the SINAMICS drive S120. The integral STARTER functionality of S7-TECHNOLOGY V4.1 is in line with the new STARTER version V4.1.
- **GSD Files for CPU 31xT**  
The new version of S7-TECHNOLOGY V4.1 supports configuration of GSD files for CPUs 31xT-2 DP. GSD Files for CPUs 31xT-2 DP can be downloaded from the Internet.
- **Printing out the technology settings with TOM**  
The parameter settings of technology objects (TO-DB updating, offset, reduction ratio, ...) can be conveniently printed out and documented.
- **Wizard to create T-Station**  
The new wizard enables users to create a complete T-Station including PG/PC station for routing, with only a few "clicks", consisting in hardware configuration of rack, CPU 31xT, subnetwork and PG/PC station.
- **Wizard for brake control**  
The new wizard enables users to conveniently parameterize the braking response of drives. The new version of the technology function "MC\_Power" enables use of the integral brake controller of the drives.  
Brake control of the following drives is supported:
  - SIMODRIVE 611U universal
  - SINAMICS S120
  - MASTERDRIVES Motion Control Plus

## 3.9 S7-Technology V3.0 SP2

### 3.9.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

- Technology-CPU 317T-2 DP
- Technology-CPU 315T-2 DP
- Microbox 420-T

### 3.9.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.3 SP3 (or higher)

#### Note

S7-Technology V3.0 SP2 has not been released for use under Microsoft Windows Server 2003.

### 3.9.3 Compatibility

Version 3.0 SP2 of S7-Technology is compatible with version 3.0.

### 3.9.4 Highlights of this Version

- **Supporting STARTER 4.0**

The SP2 of S7-Technology V3.0 now supports STARTER 4.0 integrated in S7 T Config.

STARTER 4.0 supports the following drive systems:

- All 4th generation MICROMASTER drives (new: MICROMASTER 440 V2.1.x)
- SINAMICS G110 V1.0.x and V1.1.x
- SINAMICS G120 V2.0.x
- SINAMICS G130 V2.1.x, V2.2.x, V2.3.x and V2.4.x
- SINAMICS G150 V2.1.x, V2.2.x, V2.3.x and V2.4.x
- SINAMICS S120 V2.1.x, V2.2.x, V2.3.x and V2.4.x
- SINAMICS S150 V2.1.x, V2.2.x, V2.3.x und V2.4.x
- SIMATIC ET200S FC V1.0.x
- SINAMICS GM150 with firmware V2.4.x

## 3.10 S7-Technology V3.0 SP1

### 3.10.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

- Technology-CPU 317T-2 DP
- Technology-CPU 315T-2 DP
- Microbox 420-T

### 3.10.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.3 SP3 (or higher)

#### Note

S7-Technology V3.0 SP1 has not been released for use under Microsoft Windows Server 2003.

### 3.10.3 Compatibility

Version 3.0 SP1 of S7-Technology is compatible with version 3.0.

Projects created with version 3.0 SP1 and with no component IM 174 added to the hardware configuration of the project can be processed with version 3.0 without a conversion.

Projects with a component IM 174 added to the hardware configuration can only be processed with version 3.0 SP1.

### 3.10.4 Highlights of this Version

- **Support of component IM 174**

With this version of S7-Technology the new component IM 174 is supported by the software.

The IM 174 is used to connect analogue drives and stepper drives to Motion Control-PLCs.

## 3.11 S7-Technology V3.0

### 3.11.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

- Technology-CPU 317T-2 DP
- Technology-CPU 315T-2 DP

### 3.11.2 System requirements

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.3 SP3 (or higher)

#### Note

S7-Technology V3.0 has not been released for use under Microsoft Windows Server 2003.

### 3.11.3 Compatibility

Version 3.0 of S7-Technology is compatible with version 2.0.

Projects created with version 2.0 can also be processed with version 3.0 and stored again with version V2.0, if required.

Projects created with version 2.0 can be upgraded to the new version (e.g. if the existing project is to be expanded with functions of version 3.0). The necessary description is contained in the user manual.

### 3.11.4 Highlights of this Version

- **Hydraulic axes**  
Hydraulic axes can be created with the technology "Speed control", "Positioning" or "Synchronous run". The non-linearity of the hydraulic drive is detected via the valve characteristics (implemented with the technology object "Cam disc") and compensated by the technology software.
- **SINAMICS S120**  
The integrated STARTER functionality of S7T Config now also supports firmware version V2.3.x of the SINAMICS drive S120.
- **IPO Synchronous start of axis jobs**  
In the case of short cycle times, job processing (job start and job follow-up) can extend over a number of position controller cycles. With S7-Technology V3.0 the job start can be synchronized with the interpolator clock rate for individual axes. Processing will then commence not later than after 2 interpolator cycles.
- **Fast updating of selected technology data blocks**  
With S7-Technology V3.0, updating of each individual technology data block can be shifted to different cycles. The time of the update can be selected individually for each technology data block.

#### 3.11 S7-Technology V3.0

- **Technology-DB updating**  
If the preceding update of a technology DB is not finished when a new technology DB update is started, this is called an "Overflow". The new firmware version of the integrated Technology tolerates this overflow and the update that cannot be started is omitted; The technology synchronous alarm OB (OB 65) will not be called.
- **Set actual value on the fly with external encoder**  
The technology function "MC\_ExternalEncoder" has been expanded with an additional mode for actual value correction.
- **Synchronous motion IPO - IPO\_2**  
The functionality "Gleichlauf IPO - IPO\_2" (synchronous motion) permits the operation of a leading axis (guide value source) and a slave axis under different interpolator clock rates (IPO or IPO\_2). Axes that do not require short sampling cycles for the calculation of the reference variable can thus be operated with interpolator clock rate 2. This will unload the CPU in favour of other tasks.

## 3.12 S7-Technology V2.0 SP1

### 3.12.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

- Technology-CPU 317T-2 DP
- Technology-CPU 315T-2 DP

### 3.12.2 System requirements

The Service Pack 1 (SP1) can be installed directly over the existing S7-Technology V2.0 software. The license for S7-Technology V2.0 also remains valid with the SP1.

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.3 SP1 (or higher)
- S7-Technology V2.0

#### Note

S7-Technology V2.0 and V2.0 SP1 have not been released for use under Microsoft Windows Server 2003.

### 3.12.3 Compatibility

With immediate effect S7-Technology V2.0 is being shipped incl. SP1. The order no. 6ES7864-1CC20-0YX0 remains unchanged.

S7-Technology V2.0 incl. SP1 contains both the version 2.0 and the version 2.0 incl. SP1.

Working with S7-Technology V2.0 incl. SP1 requires a conversion of the configuration data of the integrated technology. For this reason the SP1 should only be installed over an existing S7-Technology V2.0 software if one of the drive systems, listed in **Chapter 3.12.4 Highlights of this Version**, is to be used.

### 3.12.4 Highlights of this Version

- **Integrated STARTER V3.2**  
The SP1 of S7-Technology V2.0 now supports the STARTER 3.2 integrated in S7 T Config.
- **Supported Drive Systems**  
The STARTER 3.2 supports the following drive systems:
  - All 4th generation MICROMASTER drives
  - SINAMICS G110 of the Version V1.0x and V1.1x
  - SINAMICS S120 of the Version V2.1.x and V2.2.x
  - SINAMICS G150 of the Version V2.1.x and V2.2.x
  - SINAMICS S150 of the Version V2.1.x and V2.2.x
  - SINAMICS G130 of the Version V2.1.x and V2.2.x
  - SIMATIC ET200S FC with firmware V1.0x

### 3.13 S7-Technology V2.0

## 3.13 S7-Technology V2.0

### 3.13.1 With this version usable Technology-CPU's

This version of the optional package "S7 Technology" can be used with the following Technology-CPU's:

- Technologie-CPU 317T-2 DP

### 3.13.2 System requirements

#### 3.13.2.1 Software

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.3 SP1 (or higher)

#### 3.13.2.2 Hardware

The PLCopen functions contained in the "S7-Tech" library of the optional package "S7 Technology" can only run on a CPU 317T-2 DP.

### 3.13.3 Compatibility

#### 3.13.3.1 Hardware

Existing Technology CPU's with older FW versions can easily be upgraded. The required new CPU firmware can be downloaded free of charge from the Internet.

The new firmware of the integrated technology is included in the optional package "S7 Technology". The upgrade is described in Chapter A 2.1 of the user manual of the "CPU 317T Technology functions".

The new quantity framework of version 2.0 does not apply to Technology CPU's with HW version 01. HW release 02 or higher is required for this purpose.

#### 3.13.3.2 Software

Version 2.0 of "S7 Technology" is compatible with version 1.0.

Projects created with version 1.0 can also be processed with version 2.0. In addition, the user has the following options:

Store the changed project of V1.0 again under the same project format (V1.0). This will ensure that a user can continue working on the project with version 1.0 of "S7-Technology".

Upgrade the project to version 2.0. This will enable the use of all new PLCopen functions ("S7-Tech V2.0" library).

#### 3.13.4 Highlights of this Version

- **Performance increase**  
Performance increase, in particular when transferring cam disks from the user program.
- **Increased quantity framework**  
Increased quantity framework (only with HW release 02 of the CPU). In total, up to 64 technological objects can be configured. These can include:
  - Max. 32 Axes
  - Max. 32 Cam Discs
  - Max. 32 Cams
  - Max. 16 Measuring Probes
  - Max. 16 External Encoders
- **Isochrone mode OB 65**  
The technology synchronization interrupt OB65 a technology interrupt which is called and processed synchronously to the update of technology DBs. OB65 can be used to evaluate current and consistent data of technology DBs (see also Technology DB updates ).
- **Access to drive parameters from the user program**  
The new "MC\_ReadDriveParameter" and "MC\_WriteDriveParameter" technology functions allow the user program to read or write the parameters of a drive connected to DP(DRIVE).
- **Storing and overlapping commands**  
At the new Mode input parameter, you can decide whether to override the active motion, or to continue with the new motion after a stop, or to overlay it with the new speed.
- **Superimposed synchronous commands**  
These new superimposing synchronization functions can be used to process parts on-the-fly.
  - MC\_CamInSuperImposed, MC\_CamOutSuperImposed  
The technology functions "MC\_CamInSuperImposed" and "MC\_CamOutSuperImposed" start or end superimposing camming between the leading and following axes.
  - MC\_GearInSuperImposed, MC\_GearOutSuperImposed  
The technology functions "MC\_GearInSuperImposed" and "MC\_GearOutSuperImposed" start or end superimposing gearing between the leading and following axes.
  - MC\_PhasingSuperImposed  
Use the technology function "MC\_PhasingSuperImposed" to define a phase shift of the leading axis to the following axis in the coordinate system of superimposing synchronism.
- **Switching of data sets**  
S7-Technology V2.0 supports encoder and data record changeover in runtime. You can use the encoder changeover function to determine the material position, for example, the axes in position, in systems containing several actual value encoders. Use data record changeover to modify axis parameters (controller parameters, for example) when the system is in run.
- **Reading the reference position of cam discs**  
The new technology function "MC\_GetCamPoint" allows you to determine the position of the leading and following axes at an existing cam disk.



#### 3.13 S7-Technology V2.0

- **Support of the SCOUT cam tool**  
S7-Technology V2.0 supports the optional SCOUT CamTool V2.1 SP1. The SCOUT CamTool offers the following benefits:
  - Precise, graphic visualization of the cam
  - Quick and easy cam definition by means of drag-and-drop of cam elements
  - Quick and easy cam tuning by means of "dragging at the profile"
  - Simultaneous visualization of the position, velocity, acceleration and jerk profile has an immediate effect on the maximum velocity, the motor torque required and on mechanical load.
  - Tuning the velocity, acceleration or jerk parameters of the cam
- **Support of TM15/TM17 in conjunction with SINAMICS S120**  
S7-Technology V2.0 supports the operation of SINAMICS Terminal Modules TM15 and TM17 High Feature in combination with the SINAMICS S120 system. The Terminal Modules can be used as measuring sensor inputs and (high speed) cam outputs.

## 3.14 S7-Technology V1.0

### 3.14.1 With this version usable Technology-CPUs

This version of the optional package "S7 Technology" can be used with the following Technology-CPUs:

- Technologie-CPU 317T-2 DP

### 3.14.2 System requirements

#### 3.14.2.1 Software

This version of the optional package "S7 Technology" only runs together with the following release of the SIMATIC Software:

- STEP7 V5.2 SP1 HF1 (or higher)

#### 3.14.2.2 Hardware

A Micro Memory Card (MMC) is mandatory to be able to operate the Technology-CPU. The minimum requirement for the CPU 317T-2 DP is a 4 MB card.

### 3.14.3 Compatibility

The CPU 317T-2 DP is largely compatible with the CPU 317-2 DP. Restrictions exist with regard to the PROFIBUS DP(DRIVE) interface.

### 3.14.4 Highlights of this Version

- **Motion functionality**  
In the first delivery stage the library of motion function blocks will include 27 motion instructions. This enables the following basic applications:
  - Absolute positioning in the operating modes absolute, relative, additive and superimposed
  - Geared synchronous motion
  - Electronic cam disc
  - Measuring probe functionality (e.g. for print mark correction)
  - Cam functionality
  - Moving to a positive stop
- **Performance of the motion functionality**  
The motion control performance depends predominantly on the number of technological objects (axes, cams, etc.), as well as on the number and type of the motion control tasks. Guideline: Eight positioning axes at a clock rate of 3ms of the position controller.
- **Supported hardware of the PROFIBUS DP(DRIVE) interface**  
In addition to a DP/MPI port, the CPU 317T-2 DP also has a PROFIBUS DP(DRIVE) interface. The DP(DRIVE) interface is suitable (in the first delivery stage) for the connection of drive systems and some additional components. The following are supported:
  - MICROMASTER 420/430/440 and COMBIMASTER 411 (only as rotating axis, no positioning functionality)

#### 3.14 S7-Technology V1.0

- MASTERDRIVE MC
- MASTERDRIVE VC (only as rotating axis, no positioning functionality)
- SIMODRIVE POSMO CD/SI/CA
- SIMODRIVE 611U
- SINAMICS S
- SIMODRIVE isochrone mode PROFIBUS DP sensor
- ADI4 (analog drive interface for 4 axes)
- Isochrone mode ET 200M with
  - IM 153-2 (6ES7153-2BA00-0XB0)
  - SM 322 DO16xDC24V (6ES7 322-1BH10-0AA0) for additional cam output
  - SM 321 DI16xDC24V (6ES7321-1BH10-0AA0) for additional limit switch

The DP(DRIVE) interface supports isochrone mode.

- **Encoder connection:**

The encoder is read by the drive (except for the ADI4). If required, an additional encoder can be read via the "SIMODRIVE sensor isochron", e.g. to detect the position of a real master.

## 4 Bibliographic References

This list is by no means complete and only provides a selection of appropriate sources.

Tabelle 4-1

|     | Themengebiet   | Titel  |
|-----|--|--|
| \1\ | Reference to the entry                               | <a href="http://support.automation.siemens.com/WW/view/en/23411204">http://support.automation.siemens.com/WW/view/en/23411204</a>  |
| \2\ | Siemens Industry Online Support                      | <a href="http://support.automation.siemens.com">http://support.automation.siemens.com</a>  |
| \3\ | Siemens Industry Online Support Applications & Tools | <a href="http://support.automation.siemens.com/WW/view/en/20208582">http://support.automation.siemens.com/WW/view/en/20208582</a>  |
| \4\ | Technology-CPU's                                     | Substitution of the Technology CPU's31xT(F)-2 DP by CPU's31xT(F)-3 PN/DP:<br><a href="http://support.automation.siemens.com/WW/view/en/86535229">http://support.automation.siemens.com/WW/view/en/86535229</a> |