

# service & SUPPORT

Technology CPU  
Upgrading the CPU Type in a STEP7 Project

**SIEMENS**

## Table of Contents

<b>Table of Contents</b> .....	<b>2</b>
<b>Question</b> .....	<b>3</b>
How can I replace the configured Technology CPU by another Technology CPU with S7 Technology V3.0 SP1 in an existing STEP 7 project? .....	3
<b>Answer</b> .....	<b>3</b>
To replace the configured Technology CPU by another Technology CPU, follow the instructions listed in this document. ....	3
<b>1 Backing up the Numbers of the Technology DBs</b> .....	<b>4</b>
<b>2 Upgrading the Configured CPU</b> .....	<b>5</b>
2.1 Replacing the CPU in HW Config .....	5
2.2 Adapting the technology objects in S7T Config .....	6
2.3 Regenerating the technology DBs in TOM .....	8
2.4 Characteristic features when using the Microbox 420T .....	10
2.4.1 Integrating the Microbox 420T .....	10
2.4.2 Transferring the technology .....	11
2.4.3 Transferring the PLC program .....	11
2.4.4 Regenerating the technology DBs in TOM .....	11
2.4.5 Final work .....	11
<b>3 History</b> .....	<b>12</b>

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## Question

How can I replace the configured Technology CPU by another Technology CPU with S7 Technology V3.0 SP1 in an existing STEP 7 project?

## Answer

To replace the configured Technology CPU by another Technology CPU, follow the instructions listed in this document.

### Note

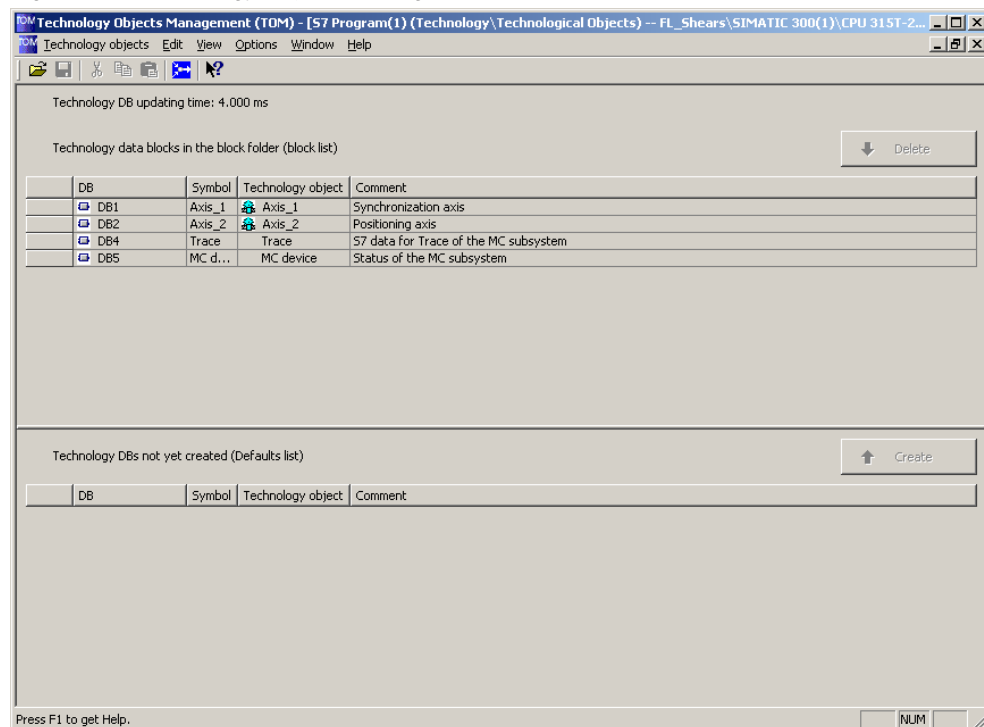
The instructions listed in this document also apply accordingly to modifying a STEP 7 project from the Technology CPU 31xT-2 DP to the Microbox 420T.

Additionally required activities are described in chapter 2.4 of this documentation.

## 1 Backing up the Numbers of the Technology DBs

If you already have a complete STEP 7 project with a configured CPU and corresponding PLC program, you should note down the **assignment** of the **technology data block numbers** to the **technology objects** in **Technology Objects Management (TOM)** before upgrading the CPU.

Figure 1-1 Technology Objects Management (TOM)



In the figure, the assignment is, for example, as follows:

- Technology data block DB 1 → Technology object Axis\_1
- Technology data block DB 2 → Technology object Axis\_2
- Technology data block DB 4 → Technology object Trace
- Technology data block DB 5 → Technology object MC\_Device

## 2 Upgrading the Configured CPU

The upgrade of the configured CPU is performed in three stages:

- Replacing the CPU in HW Config
- Adapting the technology objects in S7T Config
- Regenerating the technology DBs in TOM

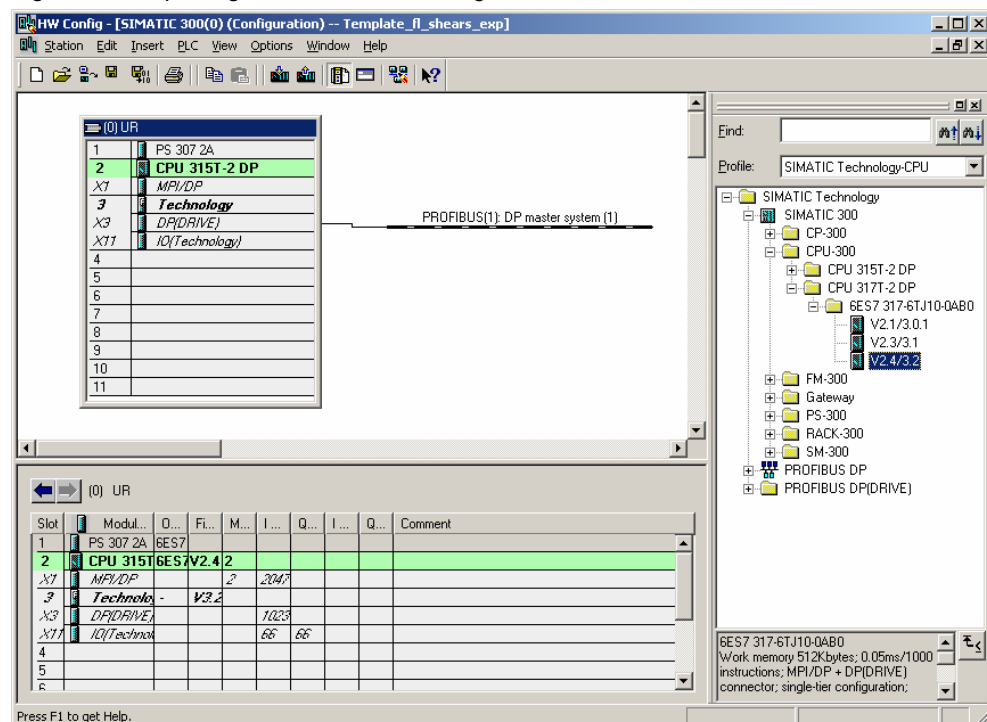
When replacing the CPU by a Microbox 420T, some characteristics have to be additionally observed, which will be listed in the last chapter of this section.

### 2.1 Replacing the CPU in HW Config

Open HW Config and drag the desired CPU from the Product Tree to the CPU to be replaced in the SIMATIC rack.

In the figure, the configured CPU 315T-2 DP in the SIMATIC rack is replaced by the CPU 317T-2 DP with firmware revision level V2.4/3.2.

Figure 2-1 Replacing the CPU in HW Config



Subsequently, use the **Station / Save** menu item to save the changed configuration in HW Config. It is not necessary to compile the new configuration; a recompilation causes an error message due to inconsistency.

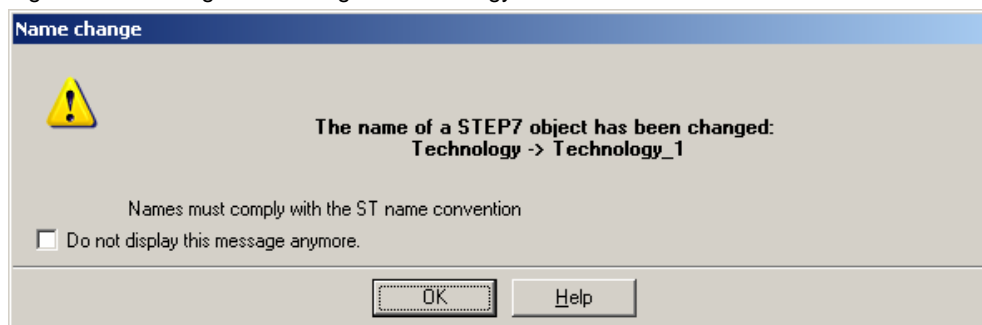
Close HW Config.

## 2.2 Adapting the technology objects in S7T Config

Open S7T Config to adapt the technology objects to the replaced CPU.

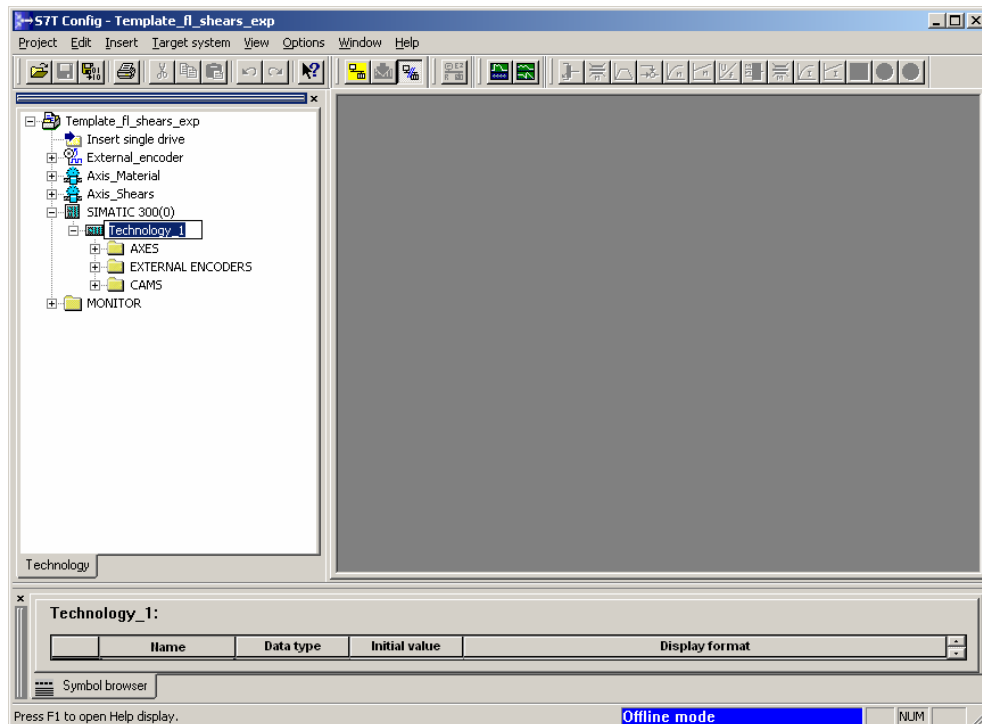
If a message indicating that the technology had to be renamed is displayed when opening S7T Config, click **OK** to acknowledge this message and then rename the technology to the previous name in the next step. Note down the source name of the technology. In the figure, this would be “Technology”.

Figure 2-2 Message: Renaming the technology



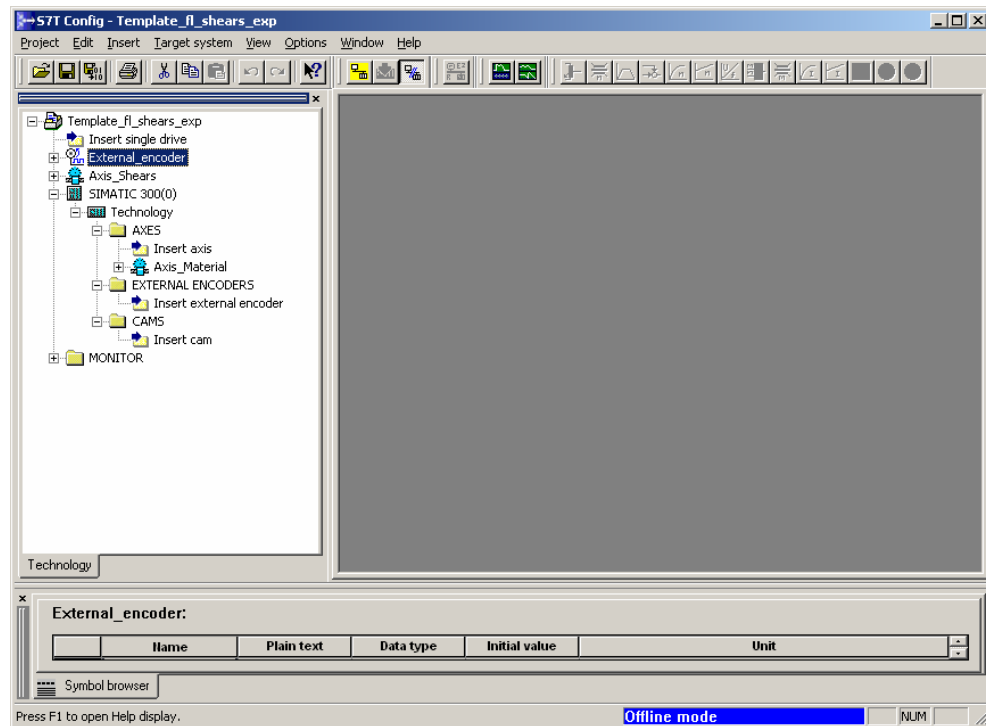
Now rename the technology to its original name. In the example, this would be the change from “Technology\_1” to “Technology”.

Figure 2-3 Renaming the technology



If all technology objects are located directly under the root node of the project navigation in S7T Config and no longer under the technology of the SIMATIC station after opening S7T Config, open all subdirectories of the technology and drag the technology objects to the corresponding subdirectories.

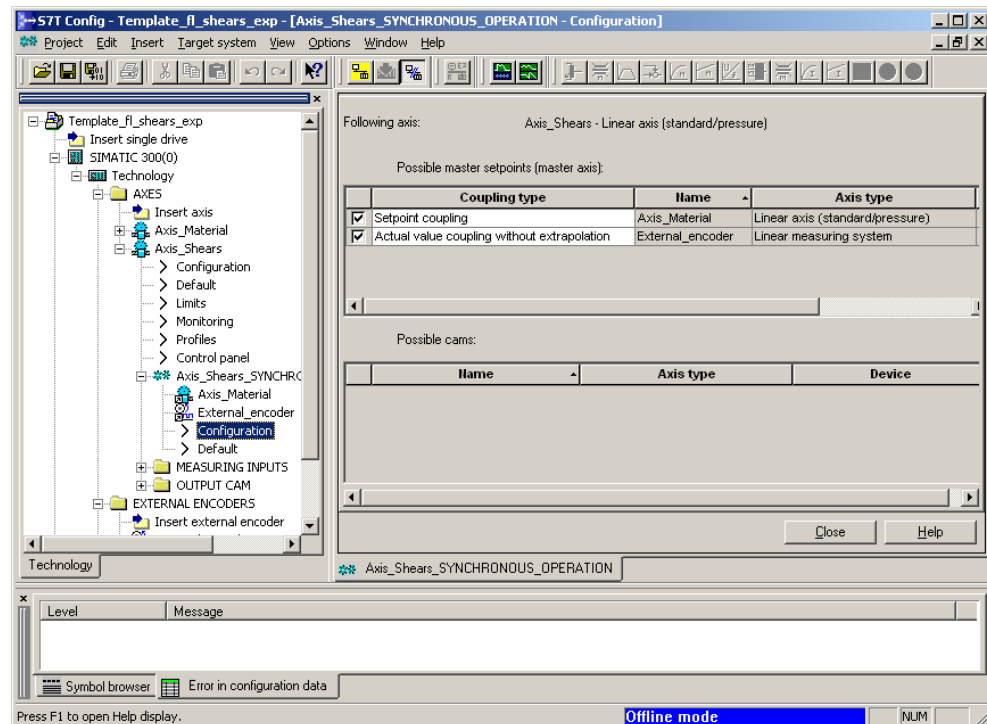
Figure 2-4 Opening all subdirectories and distributing technology objects.



**Note** If the subdirectories, AXES, EXTERNAL ENCODERS and CAMS in the figure, are not opened, the technology objects cannot be distributed to the subdirectories with the mouse!

If synchronous operation relationships exist in your project, check the configured synchronous operation relationships for the slave axis and possibly restore them.

Figure 2-5 Restoring or checking synchronous operation relationship



Select **Project / Save and compile** to save and compile the restored configuration in S7T Config.

After a successful compilation, close S7T Config.

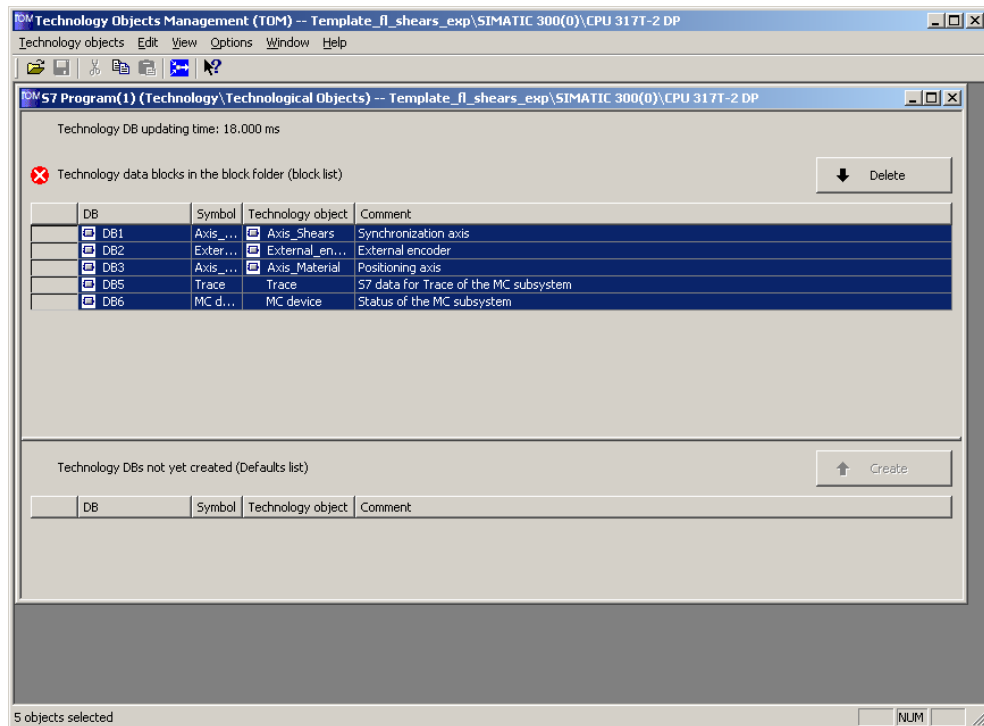
## 2.3 Regenerating the technology DBs in TOM

Open Technology Objects Management (TOM).

Note down the assignment of the technology data blocks to the technology objects (see also chapter 1), select all technology objects and click the **Delete** button to delete all objects.

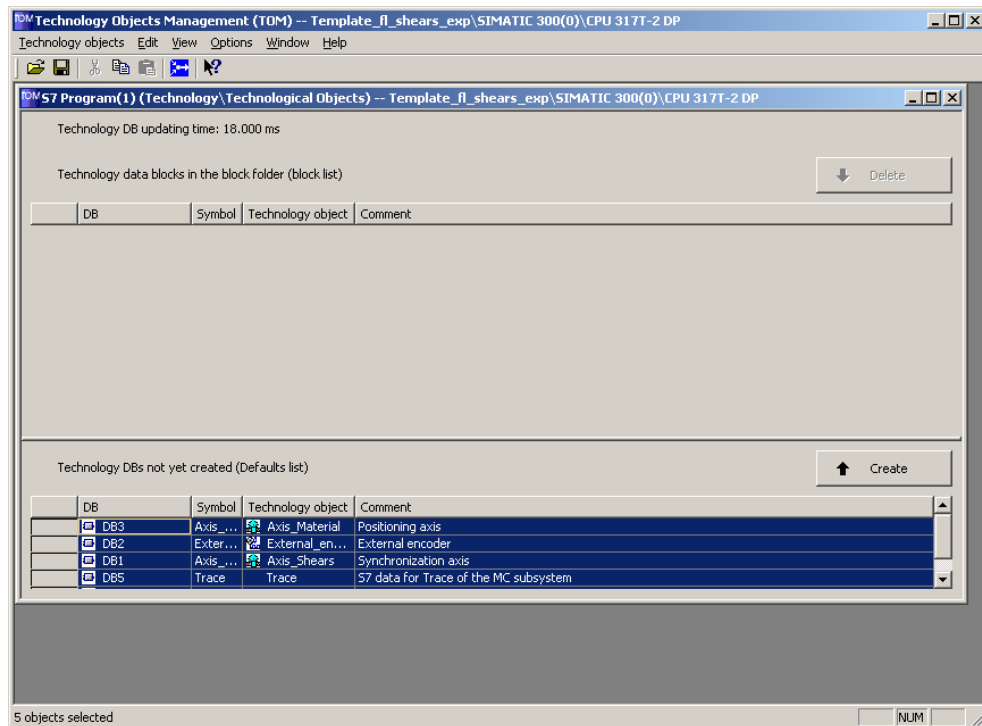


Figure 2-6 Selecting and deleting the technology objects



Subsequently, click the **Create** button to generate the technology objects. Please observe the correct assignment of the technology data blocks to the technology objects. If necessary, change the suggested data block number to the block number you noted down.

Figure 2-7 Selecting and generating the technology objects



Close Technology Objects Management (TOM).

The upgrade of the configured CPU to another CPU is now completed.

A complete compilation of the PLC program may be required, which can be called in the SIMATIC Manager when the block folder is selected via the menu items **Edit / Check Block Consistency...** and started by selecting the menu items **Program / Compile All**.

## 2.4 Characteristic features when using the Microbox 420T

### 2.4.1 Integrating the Microbox 420T

To integrate the Microbox 420T, a new PC station has to be inserted in the SIMATIC Manager by selecting the menu items **Insert / Station / SIMATIC PC-Station**.

In the **Configuration** of this PC station, the Microbox 420T can then be configured as **WinLC**.

## 2.4.2 Transferring the technology

Open S7T Config. This can be done either via the previously configured CPU or the newly inserted PC station of the Microbox 420T.

Since the previously configured CPU and the newly inserted PC station of the Microbox 420T are located in the same project, they are simultaneously visible in the project navigation of S7T Config.

Now transfer the existing technology objects to the technology of the PC station of the Microbox 420T as described in chapter [2.2](#).

Subsequently, save and compile the changes and close S7T Config.

## 2.4.3 Transferring the PLC program

In the SIMATIC Manager, copy the existing blocks of the PLC program to the block folder of the PC station of the Microbox 420T without system data.



**Do not copy the system data of the previous CPU to the block folder of the PC station of the Microbox 420T since otherwise the configuration of the PC station is lost.**

Also copy possibly existing other folders such as text libraries etc. to the S7 program of the PC station of the Microbox 420T.

## 2.4.4 Regenerating the technology DBs in TOM

In Technology Objects Management (TOM) of the PC station of the Microbox 420T, regenerate the technology objects as described in chapter [2.3](#).

## 2.4.5 Final work

After all necessary program parts have been transferred to the PC station of the Microbox 420T, the originally configured CPU can be deleted from the project.

### 3 History

Table History

Version	Date	Modification
V1.0	08/31/2006	First edition