How-To-Do

Hardware Configuration of the CPU 317NET with external CPs on the SPEED Bus by SIMATIC Manager from Siemens

Content

1 General

1.1 Information

This 'How-To-Do' describes, how you can perform the hardware configuration of the CPU 317NET, on which external CPs are connected via SPEED Bus, in the SIMATIC Manager.

You can find a detailed description of the CPU 317NET in the manual under the link http://www.vipa.com/uploads/tx_sbdownloader/HB140E_cpu_317-4NE12_12-51.pdf.

The configuration via the TIA Portal is not possible, because the CPU types, which are required for the configuration, are not supported there.

1.2 Reference

In this 'How-To-Do' the principal procedure is described.

Liability for material defects and defects of this documentation, especially for the correctness, accuracy, freedom and protection or third party rights, completeness and / or usability - except for willful misconduct or bad faith - is excluded.

2   Step by Step Procedure of the Configuration

1.   Start the **SIMATIC Manager** from Siemens and open a new project.

2.   Insert a new ‚SIMATIC 300 - Station' .

3.   Open the hardware configurator by double-click on *Hardware.*

4.   Open the hardware catalog in the hardware configurator.

5.   Then open on the right the folder *SIMATIC 300→ Rack-300* and insert the rack into the hardware configurator*.*

6.   Afterwards pull the CPU 318-2 (6ES7 318-2AJ00-0AB0 V3.0) into the inserted rack on slot 2. Now a dialog opens, in which you can click on *<New>* to create a new DP line. After successful Creation of the DP line you should see the CPU318-2 with appended DP rail. (look at the below picture)
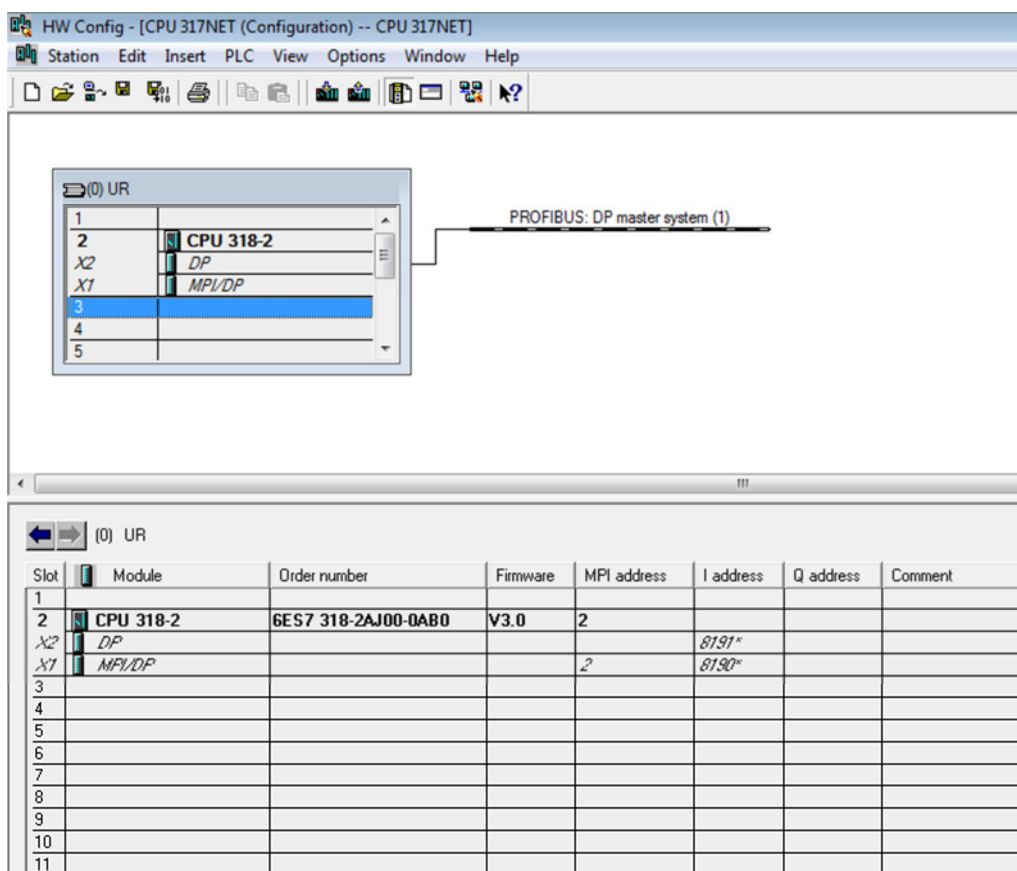
7.   Now insert all modules, which are located on the standard bus on the right of the CPU, beginning on slot 4.
     These are in this How-To-Do example:

                    1 x 16Bit digital input module (Slot 4),

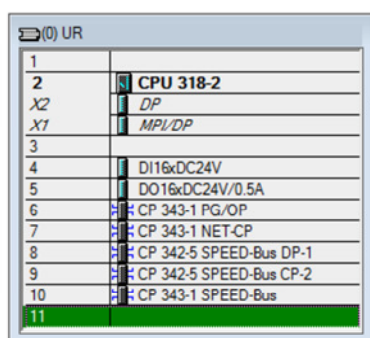   1 x 16Bit digital output module (Slot 5).

8. Insert the Ethernet-CP343-1 (6GK7 343-1EX11-0XE0 V2.0) on the next slot (Slot 6). This CP corresponds to the internal Ethernet PG/OP channel. This interface must always be projected as the first module after the really inserted modules on the standard bus.

9. Insert again the Ethernet-CP343-1 (6GK7 343-1EX11-0XE0 V2.0) on the next slot (slot 7). This CP corresponds to the integrated CP343.

10. Place all external VIPA CPs, which are located on the SPEED Bus on the left of the CPU, after the integrated CPU components. (Sequence from right to left).
    Here in the How-To-Do example:

    2 x DP-Master CP342-5. (to be projected as 6GK7 342-5DA02-0XE0 V5.0),

    1 x Ethernet-CP 343-1 (to be projected as 6GK7 343-1EX11-0XE0 V2.0).

    For the How-To-Do example the configuration should look a follows:

Slot	Module	Order number	Firmware	MPI address	I address	Q address	Comment
1							
2	CPU 318-2	6ES7 318-2AJ00-0AB0	V3.0	2			
X2	DP				8191*		*internal Profibus-Master*
X1	MPI/DP			2	8190*		
3							
4	DI16xDC24V	6ES7 321-1BH00-0AA0			0...1		*Digital Input Modul at Standard-Bus*
5	DO16xDC24V/0.5A	6ES7 322-1BH00-0AA0				4...5	*Digital Output Modul at Standard-Bus*
6	CP 343-1 PG/OP	6GK7 343-1EX11-0XE0	V2.0		288...303	288...303	*internal Ethernet PG/OP-Interface*
7	CP 343-1 NET-CP	6GK7 343-1EX11-0XE0	V2.0		304...319	304...319	*internal Ethernet CP-343*
8	CP 342-5 SPEED-Bus DP-1	6GK7 342-5DA02-0XE0	V5.0		320...335	320...335	*external Profibus-Master 1 at SPEED-Bus*
9	CP 342-5 SPEED-Bus CP-2	6GK7 342-5DA02-0XE0	V5.0		336...351	336...351	*external Profibus-Master 2 at SPEED-Bus*
10	CP 343-1 SPEED-Bus	6GK7 343-1EX11-0XE0	V2.0		352...367	352...367	*external Ethernet CP-343 at SPEED-Bus*
11							

11. Insert the Profibus-CP342-5 (6GK7 342-5DA02-0XE0 V5.0) on the next slot.
    Now a dialog opens, in which you can click on *<New>*.

12. Then the next dialog opens, which you must confirm twice with *<OK>*.

13. Open again the object properties of the CP342-5 and select the option ‚*DP-Master*' in the index card "Operating Mode" and confirm with *<OK>*. Now you should see an new DP rail at the CP-342-5.

14. For the following steps the GSD file SPEEDbus.gsd must be installed in the hardware catalog. In the hardware catalog on the right you open the folder:
    PROFIBUS-DP→ Additional Field Devices→ I/O→VIPA_SPEEDbus

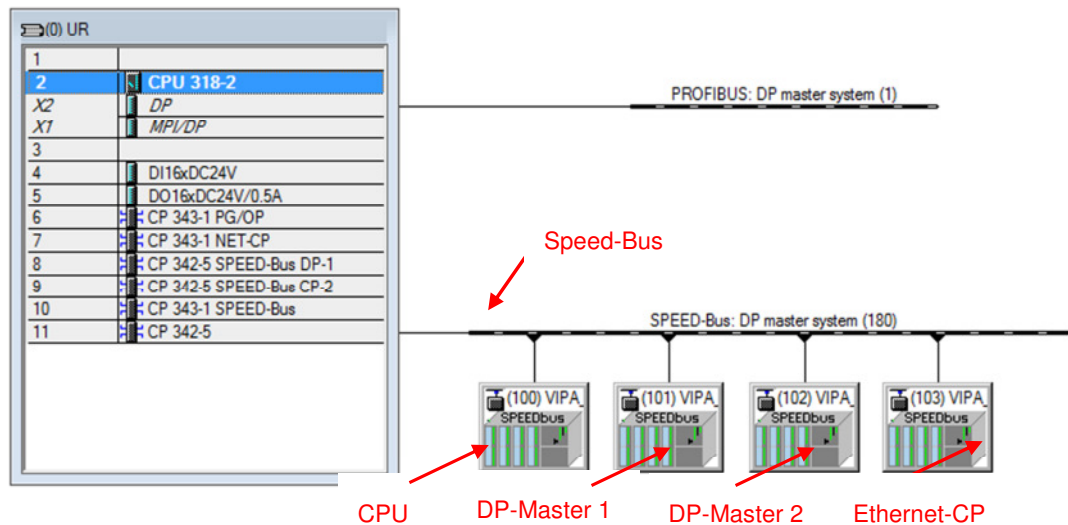15. Move the object VIPA_Speedbus via mouse to the just inserted Profibus rail.

16. Select the DP address 100 in the dialog *Properties – PROFIBUS-Interface* and click on *<OK>*. The DP address 100 at the Speed Bus is allocated for the CPU. For more modules on the Speed Bus (on the left of the CPU) add 1 to the DP address.

17. So a virtual DP slave is appended to the new Profibus line (= Speed Bus). Select the new virtual DP slave by mouse click.

18. Navigate again into the catalog and open the object VIPA_SPEED-Bus.
    Now you can see all available modules for the VIPA_SPEED-Bus.

19. Select *Slot 0* in the left below area of the window to insert modules.

20. Search for the CPU in the VIPA_SPEED-Bus directory of the hardware catalog and double-click on it. The module is inserted on slot 0 (see below picture).

21. Move back to step 17 and insert the rest of the applied modules of the SPEED-Bus.

22. If you have finished, move to the menu *Station > Save and Compile,* to compile and save the configuration.

23. Connect the PLC to your PC via MPI or TCP/IP.

24. Transfer your hardware configuration by the menu item *PLC > Download…* into your PLC.

25. Now start your PLC by the Run/Stop switch in the front. If the configured modules have been connected, the PLC switches to RUN.

26. Close the hardware configurator.

Finished hardware configuration of the How-To-Do example::

Slot		Module	Order number	Firmware	MPI address	I address	Q address	Comment
1								
2		CPU 318-2	6ES7 318-2AJ00-0AB0	V3.0	2			
X2		DP				8191*		internal Profibus-Master
X1		MPI/DP			2	8190*		
3								
4		DI16xDC24V	6ES7 321-1BH00-0AA0			0...1		Digital Input Modul at Standard-Bus
5		DO16xDC24V/0.5A	6ES7 322-1BH00-0AA0				4...5	Digital Output Modul at Standard-Bus
6		CP 343-1 PG/OP	6GK7 343-1EX11-0XE0	V2.0		288...303	288...303	internal Ethernet PG/OP-Interface
7		CP 343-1 NET-CP	6GK7 343-1EX11-0XE0	V2.0		304...319	304...319	internal Ethernet CP-343
8		CP 342-5 SPEED-Bus DP-1	6GK7 342-5DA02-0XE0	V5.0		320...335	320...335	external Profibus-Master 1 at SPEED-Bus
9		CP 342-5 SPEED-Bus CP-2	6GK7 342-5DA02-0XE0	V5.0		336...351	336...351	external Profibus-Master 2 at SPEED-Bus
10		CP 343-1 SPEED-Bus	6GK7 343-1EX11-0XE0	V2.0		352...367	352...367	external Ethernet CP-343 at SPEED-Bus
11		CP 342-5	6GK7 342-5DA02-0XE0	V5.0		368...383	368...383	

3   Revision History

3.1   Changes:

DATUM	ÄNDERUNGEN	BEARBEITER
09.01.2007	Erstellung Dokument	A. Mühfelder
02.06.2014	Überarbeitung Layout und Textanpassungen	N. Schlimm
19.03.2014	Übersetzung Englisch	N. Schlimm
02.06.2014	Textanpassung und Screenshots (Englisch)	M. Dörnhöfer