



**User guide**

# **ABC-CPU systems**

**Profinet Parameterization under STEP7**

**07/2016**

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# 1. Introduction

## 1.1 Function scope

The Profinet configuration can be done via HW-Config of the Simatic Manager (STEP7).

The configuration of the Profinet master is exactly as on a Simatic CPU 416-3 PN/DP. If with a new Profinet user the I/O addresses of an existing S5-I/O module are entered, the corresponding S5 modules are no longer served.

HW Config - [Profinet-Master (Step 7) (Konfiguration) -- Samples]

Station Bearbeiten Einfügen Zielsystem Ansicht Extras Fenster Hilfe

Suchen:  Profit: Standard

PROFIBUS-DP  
PROFIBUS-PA  
PROFIBUS IO  
SIMATIC 300  
SIMATIC 400  
SIMATIC PC Based Control 300/400  
SIMATIC PC Station

PN-IO Bus: PROFINET-IO-System (101)

(2) in151-3

Steckplatz	Baugruppe	Bestellnummer	E-Adresse	A-Adresse	Diagnoseadresse	Kommentar	Zugriff
0	in151-3	6ES7 151-3AA23-0AB0			16372*		voll
X1	FN-IO				16371*		voll
X1 P1 R	Port 1				16370*		voll
X1 P2 R	Port 2				16369*		voll
1	PM-E DC24V	6ES7 138-4CA01-0AA0	16368*		16368*		voll
2	8DI DC24V	6ES7 131-4BF00-0AA0	20.0...20.7				voll
3	8DO DC24V/0.5A	6ES7 132-4BF00-0AA0		20.0...20.7			voll
4	8DO DC24V/0.5A	6ES7 132-4BF00-0AA0		21.0...21.7			voll
5	8DO DC24V/0.5A	6ES7 132-4BF00-0AA0		22.0...22.7			voll
6	8DO DC24V/0.5A	6ES7 132-4BF00-0AA0		23.0...23.7			voll
7							
8							
9							
10							

Drücken Sie F1, um Hilfe zu erhalten.

## 1.2 I/O area with STEP7 Profinet connection

The peripheral area of the ABC X-CPU's of 0...5759 can be parameterized. In this area the Profinet can be used.

The S5 peripheral area is from 0...511 available. This is automatically connected to the system. The P and Q area is constructed as shown in the table. When updating the process image, only the first 128 bytes are updated, as is customary in a S5 system. These are also one on one in the S7 area available..

The S5 modules can be replaced bitwise through Profinet components.

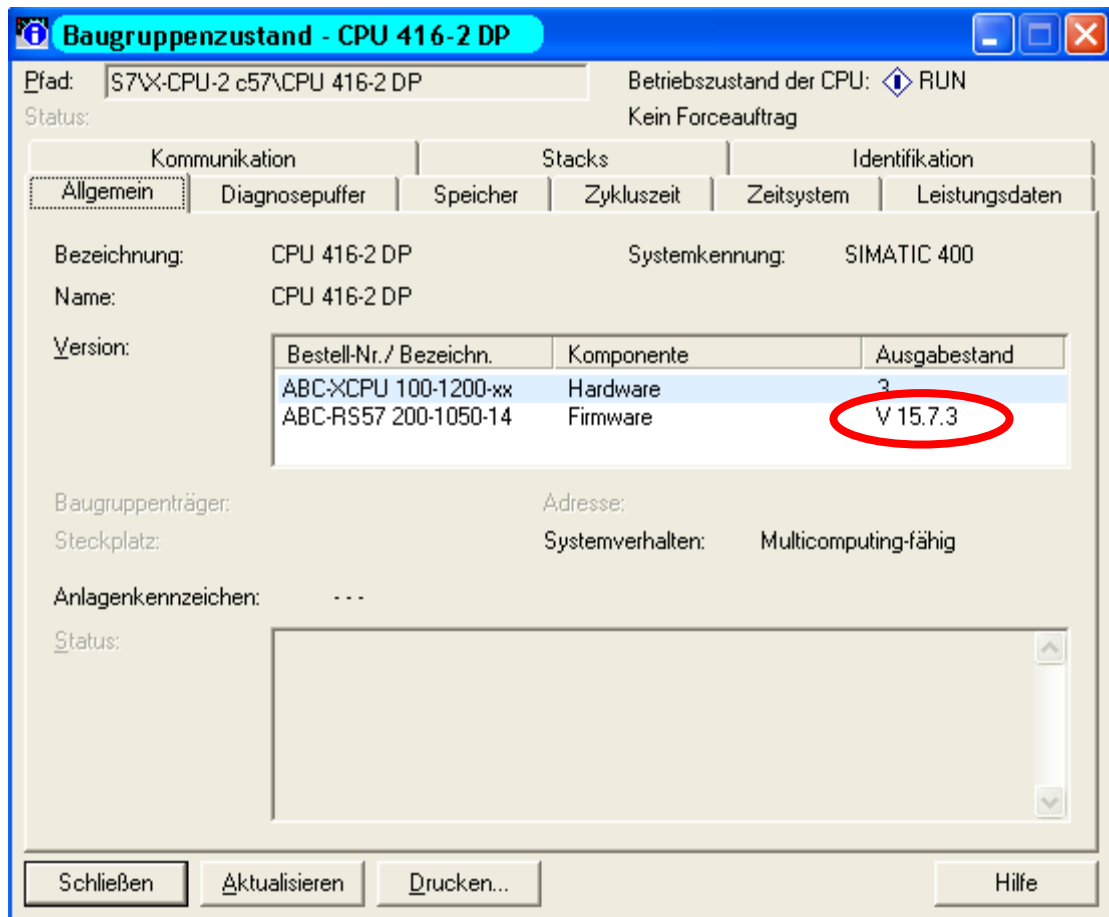
Example EB1, AB254, EW256 are replaced by Profinet-components. The bytes of the existing S5 modules are then no longer operated by the X-CPU.

S7 P-Bereich	S7 PAB*		S5 P-Bereich	S5 PAB*	
I/O	Input	Output	I/O	Input	Output
0000	0000	0000	P000	0000	0000
0001	0001	0001	P001	0001	0001
0002	0002	0002	P002	0002	0002
...	...	...	...	...	...
0126	0126	0126	P126	0126	0126
0127	0127	0127	P127	0127	0127
...	0254	0254	...		
0254			P254		
0255			P255		
0256			Q000		
0257			Q001		
...	Größe, siehe CPU Eigenschaft.	Größe, siehe CPU Eigenschaft.	...		
0510			Q253		
0511			Q254		
0512					
0513					
...					
...					
...					
5758					
5759					

\*PAB: process image

## 1.3 Firmware version

The firmware version of the X-CPU must be greater or equal v16 Build 0720.



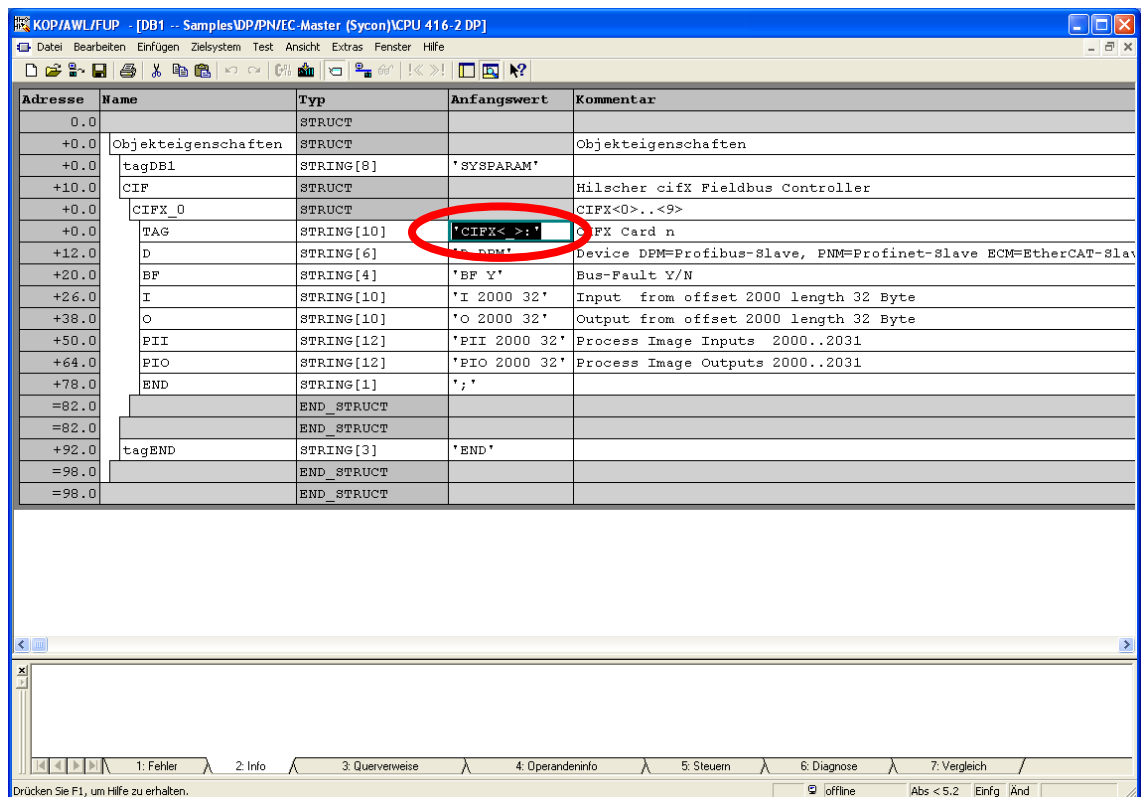
A firmware update is free under <http://www.abcit.eu/DownloadsPage>  
the download area on our website available.  
Please perform a corresponding update.

# 2. Configuration

## 2.1 STEP7

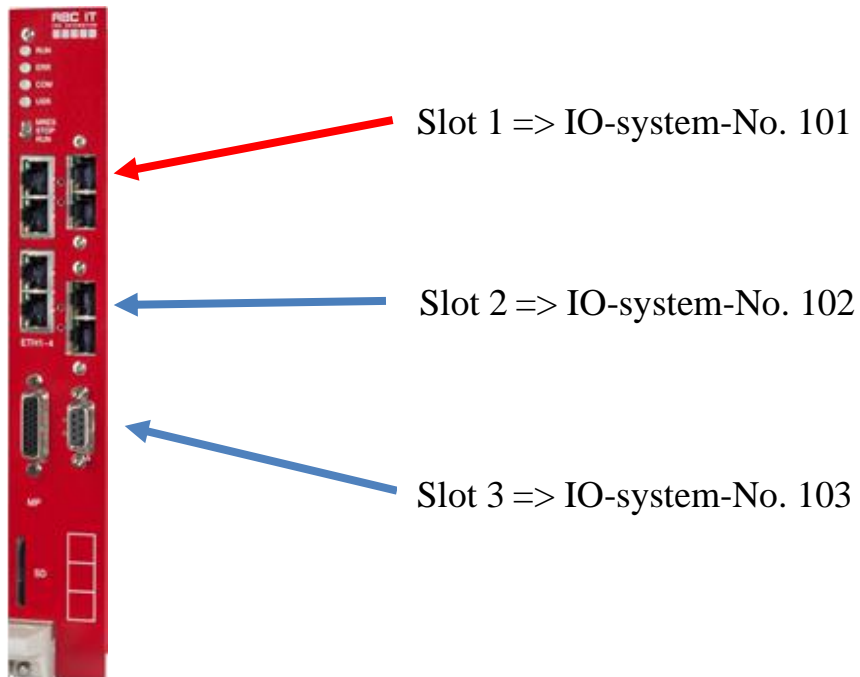
### 2.1.1 SYSPARAM-DB

In the SYSPARAM-data block (for example DB1), any existing parameter of SYCON.net for the respective cifX-Card must be deactivated.

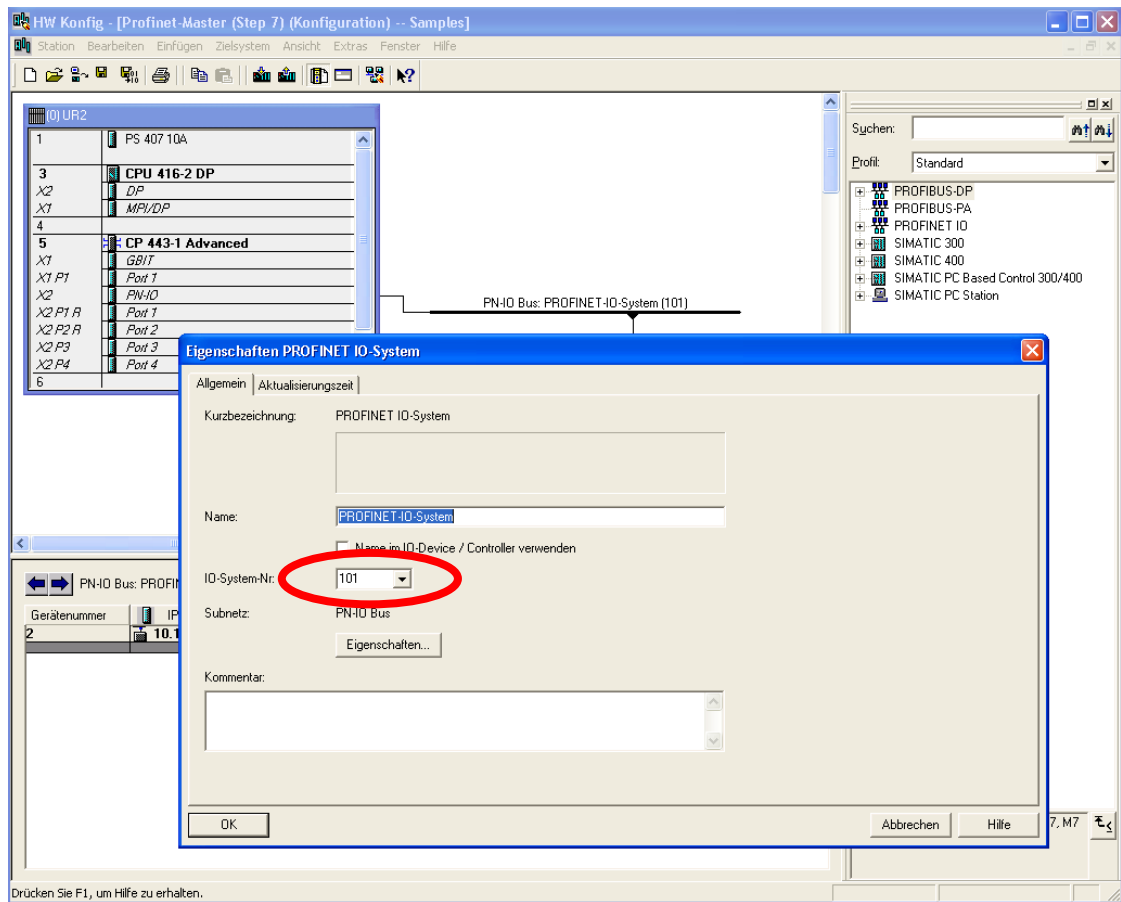


## 2.1.2 HW-Config

Create a master system with the number corresponding to your hardware:



In this case, the X-CPU-hardware is equipped with three master modules. Slot 1 will be configured, „IO-System-No. 101 is to be awarded.



Configure the Profinet to the CPU 416-3 PN/DP interface as specified on the STEP7 environment. But you can also use any other Profinet controller (for example 6GK7 443 – 1GX30 - 0XE0 / V3.0).

Transfer the hardware configuration into the X-CPU-2.

The screenshot shows the HW Config software interface. The main window displays a rack configuration with the following components:

- 1 PS 407 10A
- 3 CPU 416-2 DP
  - X2 DP
  - X1 MPI/DP
- 4
- 5 CP 443-1 Advanced
  - X1 GBT
  - X1 P1 Port 1
  - X2 P1 Port 1
  - X2 P2 Port 2
  - X2 P3 Port 3
  - X2 P4 Port 4
- 6

The CP 443-1 Advanced module is highlighted with a red circle. The hardware catalog on the right shows the selection of the CP 443-1 Advanced module. The bottom window shows the I/O address assignment for the CP 443-1 Advanced module, with the PN/IO interface assigned to the 16372\* address.

Steckplatz	Baugruppe	Bestellnummer	E-Adresse	A-Adresse	Diagnoseadresse	Kommentar	Zugriff
0	im151-3	6ES7 151-3AA23-0AB0			16372*		voll
X1	PN/IO				16371*		voll
X1 P1 R	Port 1				16370*		voll
X1 P2 R	Port 2				16369*		voll
1	PM-E DC24V	6ES7 138-4CA01-0AA0	16368*		16368*		voll
2	8DI DC24V	6ES7 131-4BF00-0AA0	20.0...20.7				voll
3	8DO DC24V/0.5A	6ES7 132-4BF00-0AA0		20.0...20.7			voll
4	8DO DC24V/0.5A	6ES7 132-4BF00-0AA0		21.0...21.7			voll
5	8DO DC24V/0.5A	6ES7 132-4BF00-0AA0		22.0...22.7			voll
6	8DO DC24V/0.5A	6ES7 132-4BF00-0AA0		23.0...23.7			voll
7							
8							
9							
10							

If an I/O address is specified, which is already used in the S5 modules , the Profinet components are given preferential treatment.

The size of the process image can be registered up to maximum 5760 for the inputs and outputs.

**Eigenschaften - CPU 416-2 DP - (R0/S3)**

Alarme	Uhrzeitalarme	Weckalarme	Diagnose / Uhr	Schutz
Allgemein	Anlauf	<b>Zyklus / Taktmerker</b>	Remanenz	Speicher

**Zyklus**

☒ OB1-Prozeßabbild zyklisch aktualisieren

Zyklusüberwachungszeit [ms]:

Mindestzykluszeit [ms]:

Zyklusbelastung durch Kommunikation [%]:

☐ Priorisierte BuB-Kommunikation

Größe des Prozeßabbilds der Eingänge:

Größe des Prozeßabbilds der Ausgänge:

OB85-Aufruf bei Peripheriezugriffsfehler:

**Taktmerker**

☐ Taktmerker

Merkerbyte:

OK Abbrechen Hilfe