Training document for the company-wide automation solution Totally Integrated Automation (T I A)

MODULE D10

PROFIBUS DP with

Master CP 342-5DP / Slave ET 200L

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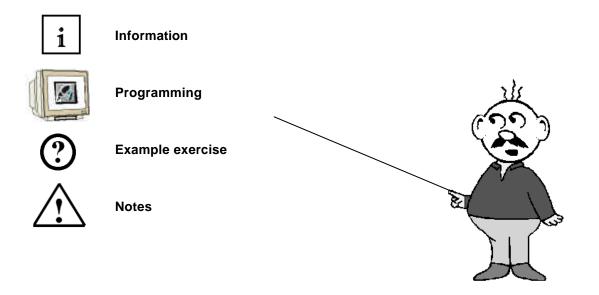
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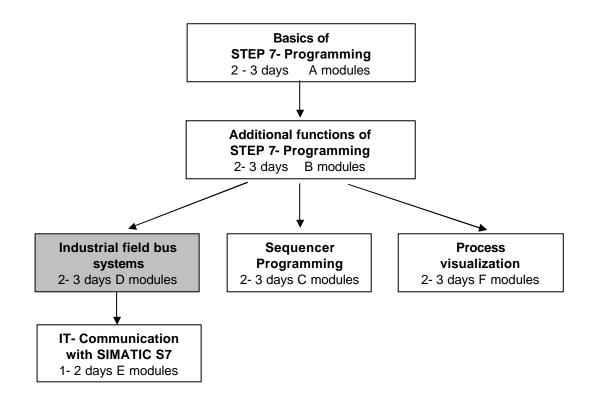
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The following symbols stand for the specified modules:



1. FORWARD

The module D9 is assigned content wise to Industrial field bus systems.



Learning goal:

In this module, the reader should learn how the PROFIBUS DP is taken into operation with a SIMATIC S7-300 with the communication processor CP 342-5DP as master and the ET 200L as a slave. The module shows the principle procedure by means of a short example.

Requirements:

For the successful use of this module, the following knowledge is assumed:

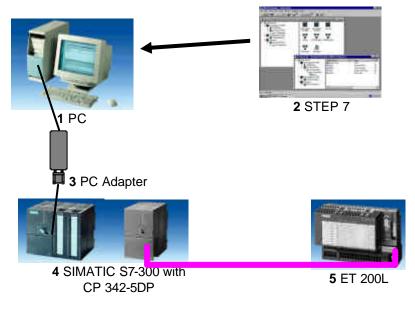
- Knowledge in the use of Windows 95/98/2000/ME/NT4.0
- Basics of PLC- Programming with STEP 7 (e.g. Module A3 'Startup' PLC programming with STEP 7)
- Basics of the PROFIBUS DP (e.g. Appendix IV Basics of field bus systems with SIMATIC S7-300)

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Required hardware and software

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- 1 PC, Operating system Windows 95/98/2000/ME/NT4.0 with
 - Minimal: 133MHz and 64MB RAM, approx. 65 MB free hard disk space
 - Optimal: 500MHz and 128MB RAM, approx. 65 MB free hard disk space
- 2 Software STEP 7 V 5.x with option NCM S7 PROFIBUS
- 3 MPI- Interface for the PC (e.g. PC- Adapter)
- 4 PLC SIMATIC S7-300 with the CP 342-5DP Example configuration:
 - Power supply: PS 307 2A
 - CPU: CPU 314IFM
 - PROFIBUS Communication processor: CP 342-5DP
- 5 Distributed I/O ET 200L with 16 digital in- and outputs
- 6 PROFIBUS cable with 2 PROFIBUS slots



6 PROFIBUS cable

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2. NOTES FOR THE OPERATION OF THE CP 342-5DP

The PROFIBUS communication processor CP 342-5DP makes it possible to attach to it the SIMATIC S7-300 by the PROFIBUS with the protocol profile distributed I/O (DP).

The parameterizing of the PROFIBUS parameters for the PLC, such as the configuration of the PROFIBUS network, takes place with the software STEP 7. The requirement is the CP342-5DP and additionally the software "NCM S7 PROFIBUS " (Contained already in STEP 7 V5.x!), so that the user has a uniform configuration tool for centralized and distributed configuration.

For the SIMATIC S7-300 with the CP342-5 as a Combimaster, the following protocol profiles are at your disposal:

- DP- Interface as master or slave according to EN 50170. PROFIBUS-DP (Distributed I/O) is the protocol profile for the connection of the distributed I/O/field equipment with a quick reaction time.
- SEND/RECEIVE- Interface (AG/AG) according to the SDA-Service (Layer 2 of the PROFIBUS). SEND/RECEIVE (FDL- Interface) offers functions with which the communication between SIMATIC S5 and S7 are under one another and they can simply and quickly be realized to the PC.
- S7-Functions. These offer optimal communication in the SIMATIC S7/M7/PC-connection.

On the part of the user program, the transmission of the data range for the DP and FDL communication is activated through programmed FC-Block calls and monitoring of effective execution monitored. The block calls for the important communication FC blocks are found in the library **"SIMATIC_NET_CP"**. In order to use these functions, the function must be copied into the project.



Note: Here the CP 342-5DP is appointed to the PROFIBUS as a master.

NOTES FOR THE OPERATIONS OF THE ET 200L



The ET 200L is a distributed I/O system with a small, compact configuration. The ET 200L is a passive participator (Slave) on the PROFIBUS-DP.

The PROFIBUS address is adjusted with two rotary switches.

Another possible adjustment of the PROFIBUS address is with a power recovery. Therefore, the ET 200L must be turned off and then back on.

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4. COMMISSIONING THE PROFIBUS (MASTER CP 342-5DP / SLAVE ET200L)



In the following example, the commissioning of a mono master system with the SIMATIC S7-300 with CP 342-5DP as a master and an ET200L as a slave is described.

For the testing of the configuration, a program will be written in which a display lamp H1 is triggered by the simultaneous activation of two buttons S0 and S1.

Assignment list:

I 64.0	S0	Button selection 1 on ET200L
I 64.1	S1	Button selection 2 on ET200L
Q 64.0	H1	Display lamp on ET200L



1. The central tool in STEP 7 is the **SIMATIC Manager**, which is opened here with a double click (\rightarrow SIMATIC Manager).



2. STEP 7- Programs are administered in projects . Such a project will be created (\rightarrow File \rightarrow New).

SIMATIC Manager		
<u>File</u> PLC <u>V</u> iew <u>O</u> ptions <u>W</u> indow <u>H</u> elp		
<u>N</u> ew	Ctrl+N	
'New Project' Wigard	~ ~	
Open Open Version 1 Project	Ctrl+O	
S7 Memory Card	• •	
Memory Card <u>F</u> ile		
Delete		
R <u>e</u> organize Manage		
Archive		
Retrie <u>v</u> e		
Page Setup		
Labeling fields Print Setup		
1 tester (Project) C:\Siemens\Step7\S7proj\tester		
<u>2</u> Convert (Project) C:\Siemens\Step7\S7proj\Convert 3 Testproject FB (Project) C:\Siemens\Step7\S7proj\Testpr 1		
<u>4</u> Testproject_DB (Project) ~ C:\Siemens\Step7\S7proj\Testproj		
	A. 1	
E <u>x</u> it	Alt+F4	J
Creates a new project or a new library.		

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3.



Give the Name ET200L to the project (\rightarrow ET200L \rightarrow OK).

New 🔀				
User projects Libraries				
Name	Storage path	▲		
Abschervorrichtung C:\Siemens\Step7\S7proj\ABSCHERV Convert C:\Siemens\Step7\S7proj\Convert CPU315_CPU315 C:\Siemens\Step7\S7proj\Cpu315_c Cutting apparatus C:\Siemens\Step7\S7proj\Cutting_2 Cutting apparatus C:\Siemens\Step7\S7proj\Cutting_ Cutting apparatus C:\Siemens\Step7\S7proj\Cutting_ Cutting apparatus C:\Siemens\Step7\S7proj\Cuttest ET200M C:\Siemens\Step7\S7proj\Et200m ET200S C:\Siemens\Step7\S7proj\STARTUP startup C:\Siemens\Step7\S7proj\STARTUP				
Na <u>m</u> e:		<u>T</u> ype:		
ET200L		Project 💌		
Storage location (path): C:\Siemens\Step7\S7proj Browse				
ОК	Cancel	Help		

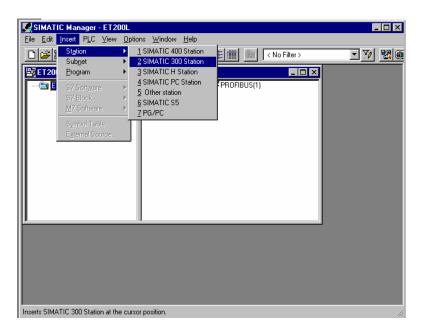
4. Highlight your project and insert a **PROFIBUS Subnet** (\rightarrow ET200L \rightarrow Insert \rightarrow Subnet \rightarrow PROFIBUS).

	noi	
File Edit Insert PLC View		
	Ko Filter >	
Station Sub <u>n</u> et		
ET20 Program	2 PROFIBUS]
S7 Software	<u>3</u> Industrial Ethernet 4 PTP	
S7 <u>B</u> lock		
M7 Software	▶	
Symbol Table		
E <u>x</u> ternal Source		
Inserts PROFIBUS at the cursor p	osition.	

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5. Then insert a **SIMATIC 300-Station** (\rightarrow Insert \rightarrow Station \rightarrow SIMATIC 300-Station).



6. Open the configuration tool for the **Hardware** with a double click (\rightarrow Hardware).

SIMATIC Manager - ET200L	
Eile Edit Insert PLC View Options Window Help □ 😂 😰 🛲 🕺 🐨 🔛 👘 🖉 🗣 🗣 📴 🐨 🗰 🗰 <	
ET200L C:\Siemens\Step7\S7proj\Et200l	
Press F1 to get Help.	

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7. Open the hardware catalog with a click on the symbol (\rightarrow) There you will see the directories are divided into the following:

- PROFIBUS-DP, SIMATIC 300, SIMATIC 400 and SIMATIC PC Based Control,

all module racks, modules and interface modules for the configuration of your hardware configuration are made available.

Insert a **Rail** with a double click(\rightarrow SIMATIC 300 \rightarrow RACK-300 \rightarrow Rail).

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STRATE SILLI Environment - F1200.	Derty Frendrot 2
	Province of the second se
	Aladah keraina begte12

After the insert, a configurations table for the configuration of the Rack 0 appears automatically.

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8. Now all modules can be chosen out of the hardware catalog and inserted into the configuration table and are also inserted into your rack. To insert, you must click on the name of the respective module, hold the mouse button and Drag & Drop the module into a line of the configurations table. We will begin with the power supply PS 307 2A (→ SIMATIC 300 → PS-300 → PS 307 2A).

SWATIC JURTI (Cont	parotico) ET200,						Delle filedet	×
1 1	Doje seems ESS 307 magginaat	Fireme) MI	1 4000000	Q attra	Contest	Image: Second	ar:306-400
3		_		-		-		
			-	-	-	-	-	
4		-	-			-	-	
		-		-			-	



Note: If your hardware differs from what is shown above, then you must select the appropriate modules from the catalog and insert them into the rack. The part numbers of the individual modules, which are found on the components, are indicated in the footer of the catalog.

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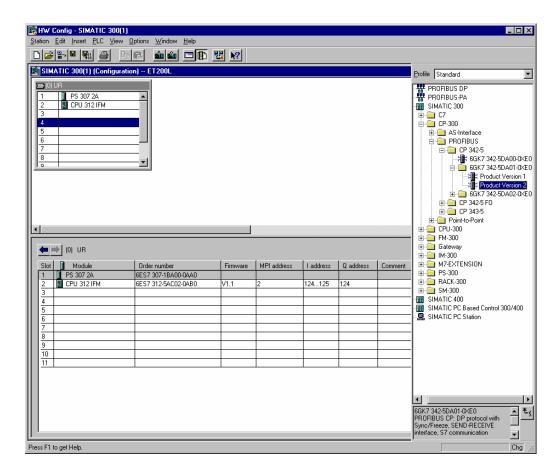
9. In the next step, we drop the CPU 314IFM into the second slot. This allows for the part number and version of the CPU to be read off (\rightarrow SIMATIC 300 \rightarrow CPU-300 \rightarrow CPU 314IFM \rightarrow 6ES7 314-5AE03-0AB0 \rightarrow V1.1).

	IW Config - SIMATIC 30 ion <u>E</u> dit <u>I</u> nsert <u>P</u> LC <u>V</u> ie	0(1) ew <u>O</u> ptions <u>W</u> indow <u>H</u> elp								_ 🗆 X
D	🗲 🔓 🖳 🎒		쁂 🕅							
	SIMATIC 300(1) (Configu							<u>P</u> rofile	Standard	•
	(0) UR (0) UR (0) UR (0) UR	×							ROFIBUS DP ROFIBUS-PA IMATIC 300 C7 CP-300 CPU 302 CPU 312 CPU 312	0480 0480 0480
11 -	Slot Module	Order number	Firmware	MPI address	I address	Q address	Comment		- 💼 CPU 313C-2 DP	
Шг	1 Siot PS 307 2A	6ES7 307-1BA00-0AA0	Filmware		I address		Comment		E- CPU 314	
	2 CPU 312 IFM	6ES7 312-5AC02-0AB0	V1.1	2	124125	124			🗉 🧰 CPU 314 IFM	
	3								🗉 🧰 CPU 314C-2 DP	
	4								- CPU 314C-2 PtP	
	5								- 📄 CPU 315	
	6								- 📄 CPU 315-2 DP	
	7 8									
	9								📄 🧰 CPU 316-2 DP	
	10								🖃 🧰 CPU 318-2	
	11								🗉 🧰 CPU 614	
									E CPU M7	
] FM-300 Gateway	
										_
								6 KB w	312-5AC02-0AB0 vork memory; 0.6 ms/1000 tions; DI10/D06 integrated;	₹
									onnection; single-tier	-
Inse	tion possible									 Chg //

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10. Then we drag the communication processor for the PROFIBUS **CP 342-5DP** onto the fourth slot. Now the order number and version of the model can be read off the front (\rightarrow SIMATIC 300 \rightarrow CP-300 \rightarrow PROFIBUS \rightarrow CP 342-5DP \rightarrow 6GK7 342-5DA01-0XE0 \rightarrow Product Version 2).





Note: Slot number 3 is reserved for interface modules and remains empty. The order number of the module is displayed in the footer of the catalog.

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11. By the entering of the communication processor, the following window appears, in which you assign a PROFIBUS address to the CPU 342-5DP and must already choose the first PROFIBUS net. When you want to alter the parameter of the PROFIBUS net, you must highlight it and then click on **Properties** (→ Properties).

Properties - PR	OFIBUS in	nterface	CP 342-5 (R0/S4)				×
General Pa	rameters						
<u>A</u> ddress: Highest addre		2 💌	If a subnet is s the next availa			ggested.	
Transmission		ps					
Subnet: not netw			1.5 Mbps		<u>N</u>	ew	
					Prop	erties	
					D	elete	
							l
							l
ОК				Abbre	echen	Hilfe	

12. Now you can choose the **Highest PROFIBUS Address** (here \rightarrow 126), the **Transmission Rate** (here \rightarrow 1,5 Mbit/s) and the **Profile** (here \rightarrow DP). (\rightarrow OK).

Properties - PROFIBUS				×
General Network Settings				
Highest PROFIBUS Address:	126 💌	Change	<u>O</u> ption	\$
Iransmission Rate:	45.45 (31.25) Kbps 93.75 Kbps 187.5 Kbps 500 Kbps 1.5 Mbps 3 Mbps			
Profile:	DP Standard Universal (DP/FMS) User-Defined		<u>B</u> us Param	ieters
ОК		Δ	bbrechen	Hilfe

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 Now the addresses of the communication processor in the I/O address space of the CPU are noted (Here: PI 256...271 / PQ 256..271). Choose the properties of the communication process through a double click on the 'CP 342-5DP' (→ CP 342-5).

1 H.M.A.							The Proceed Transfer Solo Transfer
(10)# (larm	{ Parmet	107 4000	Taster	Karooc		
MUNITER	HEAT REPORTED AND AND AND AND AND AND AND AND AND AN	et y	T.	NU.V.S.	124		14 - 54CF.000
COLMER_	882.963099.045		1	31.11	28.271		ANALE C Inner Control
		_	-	-	-		and the second second
					+	-	-

14. Set the Operation Mode to DP master and accept with OK (\rightarrow Operation Mode \rightarrow DP master \rightarrow OK).

	342-5 - (R0/S4)	×
General Addre	sses Operating Mode Options Diagnostics	
© <u>N</u> ₀ DP		
• DP mast		
DP <u>d</u> elay ti	me [ms]:	0.0
Estimated I	DP reaction time incl. delay time [ms]:	
	with global controls [ms]:	
		<u>R</u> ecalculate
O DP <u>s</u> lave		
🔽 The m	odule is an agtive node on the PROFIBUS subnet	
Master:	Station: Module:	
	Plack (FI) / slot (S):	
	Interface module slot:	
DP mode:	C7	
D <u>r</u> mode.	S7-compatible	
ОК		Cancel Help

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15. Then a bar chart for the **Master system** is shown to the right of the CP342-5DP, in which you can arrange the PROFIBUS slaves. This happens by clicking the desired module (here the **ET 200L** with **16DI/16DO**) from the hardware catalog in path **PROFIBUS-DP**. By Drag & Drop with the mouse, it can be dropped into the master system (\rightarrow PROFIBUS DP \rightarrow ET 200L \rightarrow L-16DI/16DO \rightarrow 6ES7 133-1BL00-0XB0).

HW Config - SIMATIC 300(1)	
Station Edit Insert PLC View Options Window Help D글라운 모두 백 등 미리 호텔 호텔 문제	
SIMATIC 300(1) (Configuration) ET200L	Profile Standard
PROFIBUS(1): DP master system (180) PROFIBUS(1): DP master system (180)	⊕ DP V0 slaves ⊕ DP/AS i ⊕ DP/AS i ⊕ ENCODER ⊕ ET 2008 ⊕ ET 2000co ⊕ E SC IN SC ⊕ E SC IN SC C ⊕ E SC D1 16xDC24V ⊕ E SCD 116xDC24V ⊕ E SCD 116xDC24V ⊕ E SCD 116xDC24V ⊕ E SCD 12xDC24V ⊕ E SCD 132xDC24V ⊕ E SCD 116xDC24V ⊕ E SCD 116xDC24V ⊕ E SCD 116xDC24V/ ⊕ E SCD 116xDC24V/05A ⊕ E SCD 1016xDC24V/05A
PROFIBUS address I Module Order number Firmware Diagnostic address Comment	
	L-16DI-120VAC L-32DI DP L-32DI DP L-8DI/8D0-120VAC L-8DI/8D0-120VAC L-8DI/8D0-120VAC L-16D0 DP L-16D0 DP L-16D0-120VAC L-16D0-120VAC
Press F1 to get Help.	Chg //

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16. By the entering of the slave, the following window is displayed in which you must assign a PROFIBUS address to the slave. This address must be identical to the address that you chose for the rotary switch of the ET 200L (\rightarrow 3 \rightarrow OK).

Properties	- PROFIBUS interface	L-16DI/16D0	DP		×
General	Parameters				
<u>A</u> ddress:	E				
Transmis	sion rate: 1.5 Mbps				
<u>S</u> ubnet:					
not PROFIB	networked	1.5 Mbps		<u>N</u> ew.	
	(1)			Properti	es
				Dejet	e
OK			Abbr	echen	Hilfe

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 The addresses of the in- and outputs on the ET 200L can now be noted (Here: I 0...1/Q 0...1). An automatic address assignment takes place in the order similar to how slaves are inputed.



Note: The declared addresses are the in-/output addresses within the communication processor. In the program of the CPU, one cannot directly access these addresses. First the in-/output address ranges must be transferred over the FC blocks in the address ranges of the CPU.

The configuration table should first be saved and compiled with a click on \square and then downloaded in to the PLC \square . The mode switch of the CPU must be on STOP! (\rightarrow \square)

INATIC 101	() (Configuration) - E1208.				these states	Danier	-
073	R21FM		WJSH1 (PP au			10 VM atoms 10 PARAL 11 PARAL 12 PARAL 14 PARAL <	N Y W 4015000 4015000
	erarmon de 6-7 : 1 Octomentes	1 A MARKET	GAMIN	10		+ L tC-00 160C2 + L tC-00 160C2 L 1000 0P	
	The Land	- ANDERSON	E.L.	Competence .		🚡 U960rt39/AC	
1927	2800 Cte 78000	2.1.				L 1006 0P	
						C EDURANCE T2000 C EDURANCE 200 C ENDOR 200 C ENDOR 200 C ET 2000 ET 2	

18. The CPU 315-2DP is then activated as a target module of the download activity (\rightarrow OK).

Select Target Module			×
Target Modules:			
Module	Racks	Slot	
CPU 312 IFM	0	2	
Select All			
Jelect All			
OK	Canc	el	Help

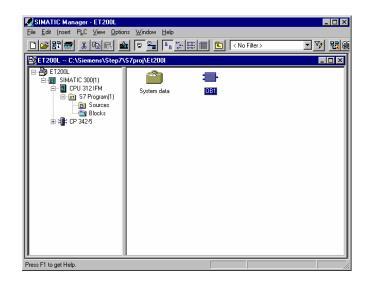
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19. The station address of the CPU in the MPI net is then chosen. You are only connected with the CPU so you can accept with **OK** (\rightarrow OK).

Select Station A	ddress 🛛
Over which station	address is the programming device connected to the module CPU 314 IFM?
<u>B</u> ack:	
<u>S</u> lot	2 =
Target Station:	🕼 Local
-	C Can be reached by means of gateway
Connection	to target station
and an approximation of the second	ddress
MPI 2	
OK	Cancel Help

20. From the **SIMATIC Manager**, open the data block **OB1** with a double click (\rightarrow OB1).



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21. Optional: Enter the properties of the OB1 for documentation and accept with OK (\rightarrow OK).

Properties - Organization	n Block			×
General - Part 1 General	- Part 2 Calls Attributes			
<u>N</u> ame:	081			
Symbolic Name:				
Symbol <u>C</u> omment:				
Created in <u>L</u> anguage:	STL			
Project path:				
Storage location of project:	C:\Siemens\Step7\S7proj\Et200I			
D	Code	Interface		
Date created: Last modified:	30/09/2002 08:58:08 07/02/2001 03:03:43	15/02/1996 04:51	:12	
C <u>o</u> mment:	"Main Program Sweep (Cycle)"		A	
			7	
ОК			Cancel	Help

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The transmission of the data range for the in- and outputs of the PROFIBUS DP slaves is activated through the programmed FC block calls of the user program. These FCs also monitor the effective execution.

The block calls for the important communication FC blocks are found in the library "SIMATIC_NET_CP". In order to use these functions, the functions must be copied into the project.

The FC block **DP-SEND** transfers data from the user program in the CPU to the PROFIBUS- CP. For the operation type of the PROFIBUS– CP, the DP-SEND has the following importance:

• For the application in DP-Master

The block assigns the data of the indicated DP output range to the PROFIBUS-CP for the output module by the distributed I/O.

• For the application in DP-Slave

The block assigns the data of the indicated DP data range of the CPU in the send buffer of the PROFIBUS-CP for transmission to the DP-Master.

By the call of the FC block DP-SEND, the following parameters must be entered:

Name	Туре	Range of values	Comment
CPLADDR	WORD		Module-start address (The configuration table can
			be extracted in STEP 7).
SEND	ANY		Indication of the address and length of DP-Send
			range (the address can refer to the I/O-Ranges, bit
			memory address areas and data block areas).
DONE	BOOL	0: -	Displays, if the job was handled error free.
		1: New data	
ERROR	BOOL	0: -	Error display
		1: Error	
STATUS	WORD		Status display

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The FC-Block **DP-RECV** receives data over the PROFIBUS DP. For the operation type of the PROFIBUS –CP, the DP-SEND has the following importance:

- For the application in DP- Master The block accepts process data of the distributed I/O as status information in the indicated DP input range.
- For the application in DP- Slave

The block accepts the transferred DP data of the DP- Master from the receive buffer of the PROFIBUS -CP in the indicated DP data range of the CPU.

By the call of the FC block DP-RECV, the following parameters must be entered:

Name	Туре	Range of values	Comment
CPLADDR	WORD		Module-start address (The configuration table
			can be extracted in STEP 7).
RECV	ANY		Indication of the address and length of DP-
			receive range (the address can refer to the
			I/O-Ranges, bit memory address areas and
			data block areas).
NDR	BOOL	0: -	The state parameter displays, if new data was
		1: New data accepted	accepted.
ERROR	BOOL	0: -	Error display
		1: Error	
STATUS	WORD		Status display
DPSTATUS	BYTE		DP-Status display

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22. With LAD, STL, FBD: Program blocks, you now have an editor which gives you the possibility to generate your STEP 7- Program. Here the organization block OB1 was already opened with the first network. In order to generate your first logical operation, you must highlight the first network. Now you can write your first STEP 7- Program. Several programs can usually be divided into

networks. Open a new network by clicking on the network symbol

Here the inputs of the DP slaves are read into network 1 with the block DP_RECV. You can insert this block into your network from the Libraries of blocks in the catalog (\rightarrow Libraries \rightarrow SIMATIC_NET_CP \rightarrow CP 300 \rightarrow FC2 DP_RECV).

In Network 3, the outputs of the DP slaves are written with the block **DP_SEND**. You can insert this block into your network from the **Libraries** of blocks in the catalog (\rightarrow Libraries \rightarrow SIMATIC_NET_CP \rightarrow CP 300 \rightarrow FC1 DP_SEND).

Now save the OB1 block \square (\rightarrow \square).

Thein fragman design (Cytle)* Thein fragm	The entropy of the second seco
and: TALL "THP BECK" //TCl CALL "THP BECK" //TCl CTLLAIN: -SHIFFILD //TCl CTLLAIN: -SHIFFILD //TCchick start shifteen of the CF14F-10F SECV - SHIFFILD //Tcchick start shifteen of the DF-Slaves = R 90.0 TALGE -tHILL //Tcchick start bit	FF00ythe FC United FC United FC United FTF Hoote
Call THF DECY //TCl Call THF	FTEI Injoin FOT Injoin STOCENTE
Call THF DECY //TCl Call THF	Contracts
CALL "DF RECY" //TC3 CLAIRS 1-BEIGRAID //TcAinis start address of the CD-04-104 SECV -996 04.0 BTT 1 //TcAinis start address of the DF-Slams - R 10.0 TD400 :=TE1L1 //Trans bit	Malph Indexes Dence Marchard Long Marchard Cong Marchard Cong
CALL "DF RECY" //TC3 CLAIRS 1-BEIGRAID //TcAinis start address of the CD-04-104 SECV -996 04.0 BTT 1 //TcAinis start address of the DF-Slams - R 10.0 TD400 :=TE1L1 //Trans bit	Standard Linear INATE SAT CI INATE SAT CI INATE SAT CI INATE SAT INATE SAT INATE SAT INATE SAT
CALL TOP RECY. //PCI CLAIRS :-04109110 //Recile start address of the CD340-109 RECY :-940 04.0 BTH 1 //Recile start who inputs of the DT-Slama - R 10.0 DBMG :=010.1 //Rece but	
CFLADBE 1-Delregill //Module start address of the CD14/-UD1 RECV :0400 for 000 HTTL 1 //Modules range for the inputs of the DT-Slamma R 00.0 //Minut bit	10 700 10 700 10007 10 703 7640 10 704 16990
BECV :-980 64.0 BTTE 1 //Address tange for the inputs of the DF-Slewes * H 90.0 FDHOM :-HHNL1 //Atoms bit	ID FEG FEAD ID FILA HERORI
 H 50.0 F3500 r-HDL1 //Hinnibit 	4D FRA HEPORT
EARD reffix.1 //Examples	
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STOTATOS (#2017) S/Distance Signa	D VER LISENC
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Note: Here an ET200L is integrated with 2 byte input data and 2 byte output data over a CP342-5 DP on slot 5 (Module start address decimal: 256 / Hexadecimal 100). The input data should be in the input word IW 64 and the output data should be written to the output word QW64 in the ET200L.

It is important that all data in the defined DP slaves hardware configuration is integrated with block DP_RECV and DP_SEND, whereby all DP slaves are combined in a DP_RECV and DP_SEND.

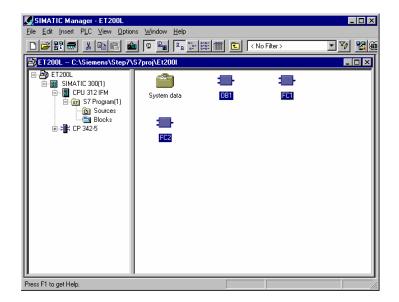
The addresses of several modules can be extracted from the hardware configuration.



23. The STEP 7- Program must now be downloaded into the PLC. In our case, this is done from **SIMATIC Manager.** There you must highlight the **OB1** and the FCs **FC1** and **FC2** in the folder

'Blocks' and click on download . The mode switch of the CPU must be on STOP!

 \rightarrow SIMATIC Manager \rightarrow Blocks \rightarrow OB1 \rightarrow FC1 \rightarrow FC2 \rightarrow **(1)**



24. Through the switching of the mode switch to RUN, the program is started.

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