

NETLink[®] PRO family

Application Examples with RFC 1006

Edition 7 / 05.11.2017

Helmholz products S7/S5 OPC-Server V4.10.2.9117 (Company Helmholz)

Products of other manufacturers INAT-OPC-Server (INAT GmbH) Indusoft Web Studio V7.0 (Indusoft) InTouch V9.5 (Wonderware GmbH) KEPserverEx V5.4.135.0 (KEPware Inc.) PROCON-Win V5.3 (GTI Control) VisAM Win32 (VISAM GmbH) WinCC V7.4 (Siemens AG) WinCC flexible 2005/2007 (Siemens AG) ZenOn V6.2 (COPA-DATA) All rights are reserved, including those of translation, reprinting, and reproduction of this manual, or parts thereof. No part of this manual may be reproduced, processed, copied, or transmitted in any way whatsoever (photocopy, microfilm, or other method) without the express written permission of Helmholz GmbH & Co.KG, not even for use as training material, or using electronic systems. All rights reserved in the case of a patent grant or registration of a utility model or design.

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Note:

We have checked the content of this manual for conformity with the hardware and software described. Nevertheless, because deviations cannot be ruled out, we cannot accept any liability for complete conformity. The information in this manual is regularly updated. When using purchased products, please heed the latest version of the manual, which can be viewed in the Internet at www.helmholz.com, from where it can also be downloaded.

Our customers are important to us. We are always glad to receive suggestions for improvement and ideas.

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Edition	Date	Revision
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2	07.04.2010	PRO family updated
3	29.11.2010	KEPserverEx V5.4.135.0 updated
4	04.07.2011	Helmholz OPC Server V4.0.6.4908 updated
5	05.08.2011	Added Indusoft Web Studio V7.0 and PROCON-Win V5.3
6	15.08.2012	Added WINCC V7.0
7	04.10.2017	Added WINCC V7.4
8	30.10.2017	KEPServer V6.2.429.0 updated

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1 Overview

1.1 Application and function description

This document is intended as a supplement to the NETLink[®] product line manuals.

Many visualization manufacturers support the TCP/IP protocol '*RFC1006*' also known as '*ISO on top of TCP*' to be able to communicate with S7-300/S7-400 systems, for example.



If this '*RFC1006*' function is activated for example in the NET-Link[®] PRO, explicit adaptations must be made to the software products. This manual describes step by step the basic settings of a small selection of visualization solutions for transferring data via this communication path.

In firmware versions from 2.3 of the NETLink ® PRO family adapters the *"RFC1006*" function is always active.

It is assumed that the reader is familiar with the development environment of the software solutions mentioned in this document, as only the points specific to the connection are described

More extensive support with commissioning and parameterization of the various SCADA-, HMI/OPC server systems is available directly from the manufacturers in question.

At this point is not described how a Internet teleservice via VPN and port forwarding is implemented with a NETLink[®] Ethernet gateway.

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Please pay attention to the information in the figures

1.2 Information in the figures

Many of the figures in this document contain settings and directions for use marked or highlighted in red.

2 RFC 1006 Activation via the Web Interface

The examples described here are based on NETLink models with firmware versions less than V2.3 (e.g. NETLink ® PRO). Prior to the use with this device the RFC 1006 functionality has to be set manually.

A detailed description is also given in the accordingly manual! We generally recommend upgrading your NETLink[®] products with the last firmware version, so you can always use the latest features.

2.1 Requirements

The NETLink[®] Ethernet gateway is connected to the PC via a network card. One of the SCADA/OPC server programs described below is also installed on this PC. The Webinterface function must not be deactivated. It is accessed via one of the installed Internet browsers (for example, Mozilla Firefox, Opera, Konqueror, or Internet Explorer).

You do not need to install any additional drivers for the NET-Link[®].

The applications described here were performed on the Window XP operating system with service package 2 and 3.

2.2 Adapting the configuration side

As soon as the Web interface is opened by entering the relevant URL *'http://<ip address>'*, the link to *"Configuration"* opens. As soon as you have answered the security query, you can write to all parameters.

From version 2.3 there is a text field: "RFC mode is always activated". In this case, you can skip this section.

The '*RFC 1006 interface ON*/OFF' option is activated by entering "*ON*" and confirming with the "*OK*" button (see Fig.)

In the next window, the settings are displayed again and must be confirmed with *"OK"* before they are finally transferred to the NETLink[®] device.

1 affects only the products: 700-881-MPI11 and 700-881-MPI12

The following figure shows the configuration screen in the NETL ink ® PRO web interface. In the current firmware versions of other NETLink ® Ethernet variants is this manual assignment not necessary.

Configuration menu in NETLink[®] PRO:

Home St.	atus Basi	c Configuration	Secu	nty	Observe Variables		Help
ETLink PRO Compa	ct Basic Confi	guration					
Device specific parameters _							
Device Name	NETLink	1					
TCP/IP Parameters							
Static IP Address	172.16.0.49	Static parameters	are used if DHCP is	s switched off			
Static Subnet Mask	255.255.0.0	Static parameters	are used if DHCP is	s switched off			
Static Gateway	0.0.0.0	Static parameters	are used if DHCP is	s switched off			
Additional NETLink Port	7777	Don't take web-kno	wit ports less that	n 1024, (RFC-Po	1102 is not allowed here?		
DHCP	OFF V						
DHCP Timeout (in seconds)	DHCP is disabled	ŕ					
Web Interface	ON .						
letLink Bus Address Single Master Single Master bus parameters	0 0FF • Bus Profil MPI Baud rate 187,5 Tslot_Init 415 Max. Tsdr 400 Tset 12	.♥ KBBt/(♥ HSA Thr Min. Tadr	31 9984 20	Is only used (address set) Is not evalue These bus p	when "Go online after tool un ngs of PGPC interface is the led if NETLink communicates anameters are used if adapte	o' naso, "Single M in ignored") via PG/PC interfac r la single master	e
	Gap Factor 5	Retry	2]			
RFC Multi Computing with TSAP	OFF 💌 Bus Addres	is 2		(Offers acce	as to multiple PLCs in a rack	by one bus addres	(6)
RFC Routing over CPs with TSAP	OFF Rack(0-7)	0 Slot(0-	31) 2	(e.g. access	over PROFIBUS-CP342-5 by	rack 0 slot 2)	
RFC TSAP Decimal Format	OFF -			Default TSAF	Format is hexadecimal (e.g.	ControlMaestro ut	es decinal format)
RFC Multi Computing with TSAP RFC Routing over CPs with TSAP RFC TSAP Decimal Format User/Password Settings User New Password	Gap Factor 5 OFF Bus Addres OFF Rack(0-7) OFF NETLink PRO Compact	Retry is 2 0 Slot(0-	31) 2	(Offers acce (e.g. access Default TSAJ	aa to multiple PLCs in a rack over PROFIBUS-CP342-5 by if ormat is hexadecimal (e.g.	by one bus addrer rack 0 stot 2) ControlMaestro ut	ia) ves decimal format)

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1 *Rebooting can take up to 15 seconds.*

After the new parameterization data have been stored, the NETLink[®] PRO is restarted to activate the new configuration.

3 Systeme Helmholz OPC-Server V4.12.0.11527

The following steps must be performed in the described sequence (Version November 2017):

3.1 Configuration of the communication partner

Start the "Configuration S7-OPC Server" program module via Start/Programs/Systeme Helmholz/S7-OPC-Server:

- Select tab card "Devices".
- In this example, click device 0 and then select *"S7-TCP/IP"* from the pull-down menu.

🙀 Systeme He	Imholz S7/S5-OPC-Se	rver-Configuration	
Connections D	evices options OPC-Serve	r Options Program	
Device 0	Not active		
O Device 1	Not supported Not active		
O Device 2	S7-MPI S7-NETLink lite		
O Device 3	S7-NETLink PRO Family S7-NETLink USB		
O Device 4	S7-CIF		
O Device 5	S7-TCP/IP	No settings available.	
O Device 6	57-PPI		
O Device 7	SS-TCP/IP		
O Device 8	Not active		
O Device 9	Not active		
O Device 10	Not active		
O Device 11	Not active		
O Device 12	Not active		
O Device 14	Not active		
O Device 15	Not active		
0			
		OK Cancel Apply	Help (F1)

- Go to the tab "Connections" in the right sub window.
- Click *"Change…."* to create a new connection.

🗱 Systeme H	elmholz \$7/\$5-OPC-	Server-C	Configuration	
Connections	Devices Options OPC-Se	rver Op	otions Program	
Device 0	S7-TCP/IP	~	TCP/IP Connections OPC-Server	
O Device 1	Not active	*	PLC no IP Address Rack Slot Type	
O Device 2	Not active	~		
O Device 3	Not active	~		
O Device 4	Not active	~	Connection no.: 0	
O Device 5	Not active	~	PLC no.:	
O Device 6	Not active	*	ID Address 102 168 4 107	
O Device 7	Not active	~	192.100.1.197	
O Device 8	Not active	*	Rack:	
O Device 9	Not active	*	Slot: 2	
O Device 10	Not active	~	Type: 57-300/400	
O Device 11	Not active	~		
O Device 12	Not active	~		
O Device 13	Not active	~		
O Device 14	Not active	~		
O Device 15	Not active	~	Change Delete Adjust columns	
			OK Cancel Apply Help) (F1)

It opens a new connection window

- The PLC no. and Rack in this example is not relevant
- Enter the NETLink[®] address in the IP address field
- Enter the MPI address of the connected PLC in "Slot"
- Finally set the type of PLC you are working with.
- Close the window by clicking "OK".

oppections	Devices	Options OPC	-Server	Onti	one Progra						
Device 0	57-TC	P/IP		opu	TCP/IP	Connection	s OPC-Serve	ar			
Device 1	Not a	ctive	~		PLC r	io IP Addr	ess	Rack	Slot	Туре	1
Device 2	Not a	ctive	~		0	192.168	.4.197	0	2	57-300/400	
Device 3	Not a	ctive	~								
Device 4	Not a	ctive	~								
Device 5	Not a	ctive	~								
Device 6	Not a	ctive	~								
Device 7	Not a	ctive	~								
Device 8	Not a	ctive	~								
Device 9	Not a	ctive	~								
Device 10	Not a	ctive	~								
Device 11	Not a	ctive	~								
Device 12	Not a	ctive	~								
Device 13	Not a	ctive	~								
Device 14	Not a	ctive	~								
Device 15	Not a	ctive	~		Cha	nge	Delete				Adjust columns
								01/			

Complete your connection settings with "Apply"

Next, select the main tab "Connections"

• Click the Button *"Scan"*.

Systeme Helmholz S7/S5-0PC-Server-Configuration	
Connections Devices Options OPC-Server Options Program	
Device PLC no R/S Connection name Primary connection Symbols	New
Connections for device number	Change Delete Scan Test OPC Client
OK Cancel Apply	Help (F1)

Enter the configured device number (possible 0 to 15). In this example -> 0

• Confirm with *"OK"*

The connection to the adapter should be established and displayed.

• The CPU can be determined with *"Test"* (this feature is optional and must not be executed in mandatory).



• The connection test was successful and can be confirmed with *"OK"*.

The OPC server is now fully configured for a NETLink[®] to PLC connection.

If you want to set up multiple connections within a device, the "*PLC no.*" has to be unique for each connection. These numbers must be different.

	Options OPC-:	berver 0	ption:	s Prog	ram	t'				
Device 0	S7-TCP/IP	*		TCP/IF	PC	onnections OPC-Serv	/er			
ODevice 1	Not active	*		PLC	no	IP Address	Rack	Slot	Туре	
O Device 2	Not active	~		2		192.168.4.197	0	2	57-300/400 57-300/400	
O Device 3	Not active	~		6		192.168.4.197	0	6	57-300/400	
O Device 4	Not active	~		\vee						
O Device 5	Not active	*								
O Device 6	Not active	~								
O Device 7	Not active	~								
O Device 8	Not active	~								
O Device 9	Not active	~								
O Device 10	Not active	~								
O Device 11	Not active	~								
O Device 12	Not active	*								
ODevice 13	Not active	~								
ODevice 14	Not active	~								
O Device 15	Not active	*		C	hang	e Delete				Adjust columns

3.2 Setting up the OPC Toolbox demo client

The following steps are provided as an example only and are not obligatory for customer applications. They serve as a visual check whether data exchange is taking place.

Start program module *"OPC Toolbox demo client"* with *Start/Programs/Systeme Helmholz/S7-OPC-Server*. The various tab cards are displayed below.

The "OPC Servers" field opens first:

1 *Choose the CPU address as PLC-number to prevent duplicates* • the tree structure can be open by clicking the plus sign in front of *"Local"*



- open "Data Access V3" in a similar manner
- open "Helmholz S7/S5 OPC Server" similarly
- Double-click "Helmholz.OPc.S7.DA.1"
- The *"group"* opens in the left field. The green circle indicates that the connection has been started.

Now switch to the "DA Browse" tab card.

- open"opcda://Helmholz.OPC.S7.DA.1/{..." in the tree structure
- A device is displayed when it has been found (in this case "0.0").
- On opening the device, the data access objects are searched from the CPU and then listed.
- Transfer the selected items into the left column by double clicking (multiple selections possible).



Now switch to the "DA Items" tab card.

- The connection quality status is displayed in the "Quality" column
- Currently, only the permissible name range elements are displayed under *"Value"*.

Softin	g OPC Tool	box Dem	io Client							
File Edit	Session Vie	w Help								
New	Dpen 🖉	R Save	Properties	× Delete	🗙 Stop	(Connect	e Start			Write
Obta Access Opcda:///Helmholz.OPC.57.DA.1/{8C5FBB87-0A6; ogroup old#A o0.0#A o0.0#M o0.0#M					Item 0.0# 0.0# 0.0#	tA IM IM	Value 128 256 256	Quality GOOD GOOD GOOD	TimeStamp 16:34:27.626 16:34:27.626 16:46:10.885	Result
< Ready				>	OPC Se	ervers DA B	rowse DA Items	AE Browse AE Eve	nts AE Conditions E	Errors /

• Every item can be edited by selecting it and then clicking the *"Properties"* button.

Softing OPC Demo Client - Properties				
OK Apply Reset				
Item ID: 0.0/MB0[02]	Native Datatype:	UI2	Server Handle:	0x00A98840
Req. Datatype: EMPTY	Access Rights:	read	Client Handle:	0x00BB3548
Deadband:	Engineering Units:	no		
Item Path:				

• The changes are adopted with "*Apply*" and "OK".

Further examples of the syntax of various items:

Softing OPC Toolbox Demo Clie	nt	
File Edit Session View Help		
New Open Save Prope	Trities Delete Stop Connect Start	Write
	Item Value Quality TimeStamp Res ● 0.0/M32B00L 4145 G00D 09:01:27:535 0:0/M32B00L 0 G00D 08:28:13:609 0:0/B1:08W2:DATE 2011:2:5 G00D 08:39:27:541 0:0/M80[02] [0:2](16, 43, 0) G00D 09:01:27:535 0:0/T5 0ms G00D 08:58:38:009 0:0/DB1:DBW6:W0 30 G00D 08:58:38:009 0:0:0/DB1:DBW6:W0 30 G00D 08:58:38:009 0:0:0/DB1:DBW6:W0 30 G00D 0:0:58:38:009 0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:	ult Server opcda:/// opcda:/// opcda:/// opcda:/// opcda:///
K North Annual Annua	OPC Servers DA Browse DA Items AE Browse AE Events AE Conditions Errors	

4 INAT-OPC-Server (INAT GmbH)

The following steps must be performed in the described sequence (status May 2008):

4.1 Configuring the INAT OPC server

The following dialog box opens when you select "*Configuration->AccessPathDefinition*" from the menu:

堲.	INAT OPC-Server TCI	PIPH1						
Kon	figuration Logger Aktu	Jalisieren An	sicht Spra	iche Hilfe				
	<u>C, <u>u</u> @ S S S S S S S S S S S S S S S S S S </u>	<mark>≫×</mark>	<u>a</u> (E)	et Qr	2 <u>1.</u> . 5			
	Access Path Defi	nitionen - I	NAT OPC	-Server				
	Konfiguration Abbruch	<u>O</u> K						
	16× 🖪							
	Verbindungsname	Тур	Prot	Interval	Akt	Ziel	Parameter	
	konni rfc1006	ISO on TC	P \$7	500	Client	192.168.4.38	lso <0100><0102>, Write	
	public	ISO on TC	P S7	100	Client	192.168.4.38	lso <0100><0202>, Write	
	public-500	ISO on TC	P S7	500	Client	192.168.4.38	Iso <0100><0202>, Write	
	public-1000	ISO on TC	P S7	1000	Client	192.168.4.38	Iso <0100><0202>, Write	
	klaus-79	ISO on TC	P S7	100	Client	192.168.4.79	Iso <0100><0102>, Write	
	cpu12c	ISO on TC	P S7	100	Client	192.168.4.38	Iso <0100><010C>, Write	
	400er	ISO on TC	P S7	10	Client	192.168.4.38	Iso <0100><0203>, Write	
	400er-2	ISO on TC	P S7	0	Client	192.168.4.38	Iso <0100><0202>, Write	
	400er-4	ISO on TC	P S7	0	Client	192.168.4.38	Iso <0100><0204>, Write	
	400er-5	ISO on TC	P S7	0	Client	192.168.4.38	Iso <0100><0205>, Write	
	400er-6	ISO on TC	P S7	10	Client	192.168.4.38	Iso <0100><0206>, Write	
	400er-7	ISO on TC	P S7	0	Client	192.168.4.38	Iso <0100><0207>, Write	
	315-2dp	ISO on TC	P S7	0	Client	192.168.4.38	Iso <0100><0203>, Write	
	cpu317-17	ISO on TC	P S7	0	Client	192.168.4.38	Iso <0100><0217>, Write	
								-
	•							<u>}</u>

A new connection is generated via menu "*Configuration->New*" in dialog box "*Access Path Definition*".

The following dialog box opens.



When you have confirmed the new connection with the OK button, you can set the parameters in the subsequent dialog box:

The most important entries are:

- The IP address of the target station
- Connection properties RFC1006



The RFC1006 setting is configured via the "ISO-on-TCP" button.

4.2 INAT-OPC Client

Select the OPC Server.

Once the server is configured, you can access the data of the controller via the OPC Client.

You can select the OPC server from which the configured data will be fetched via menu item *"File->New"*.



Configuring visualization data

- First of all, create a "*Group*"
- Menu "Group->Add Group..."

	OK
test-group	Cancel
1000	
0	- Active
10	☐ <u>U</u> pdate Rate
1	Allow Timeout
IConnectionPoi	nt (Rev 2.0) 💌
	test-group 1000 0 1 IConnectionPoi

- Then select menu "Item->Add Item..."
- Important! In field "*Access Path*" you must enter the name of the connection exactly as designated in the OPC server
- For "Item Name" enter the variable from the SPC
- Finally press button "Add Item" and then "OK"

Add New OPC Item		
Items to be Added	Attributes Access <u>P</u> ath: [400er-6 Item <u>N</u> ame: [MB0] Agtive: ▼ Datatype: [VT_EMPTY] Agray. □	OK Cancel Add Item Validate
Datatype: Native	Г Алтау Filter: * Access	All Items
You can add items using this dialog. items against the server before addin	Click on validate items if you wish to check your g them. Results will be displayed from this action.	

5 Indusoft Web Studio V7.0

The following steps must be performed in the described sequence (status August 2011). The user should be familiar with IWS or at least have the "Getting Started" guide and the Indusoft-driver specs "SIETH" at hand.

5.1 Configuring the Indusoft communication driver

Choose the tab *"Comm"* in *"Project Explorer"*, then right-click on *"Drivers"* and choose *"Add/Remove drivers"*:



Pick the *"SIETH"* driver out and add it by clicking *"Select>"*and confirm with *"OK"*:



1

Press "Help" before you select the driver in order to open the corresponding driver manual. • In the *"Project Explorer"*, tab *"Comm"* right-click on the driver *"SIETH"* and from the context menu choose *"Settings"*:

A A A A A A A A A A A A A A A A A	Graphics Tools	InduSoft Web Stu	dio _ = ×
Home View Insert Project	Graphics Help		
Project Explorer Grid Zoom One Database Spy Status Bar Pofault Output Window Zoom Box Showhide	100%	Language Aa Font Windows	
Project Explorer 4 ×			
Project LestAPP Project LestAPP Projec			
Global Graphics GTasks Comm			
Tag/Everession Value 0	uality Continuous		4 ×
raying contraction			
H + FH DB 1 DB 2 DB 3 DB 4	<u><</u>	KAPH Log XRet	
Change driver settings	Er	igineering Only CAP NUM SCRL ID: 2	X: 561, Y: 404 W: 32, H: 30 Tag count

Under *"Serial Encapsulation"* choose *"TCP/IP"* and under *"IP Address"* enter the IP address of the NETLink. Everything else will be left default:

SIETH:	
Serial Encapsulation: TCP/IP	
Network	
IP Address: 192.168.4.49	
Port Number: 10001	
Status Tag:	
Server Mode	
1 - Signed / 0 - Unsigned:	String 1:
0	
Initial Connection ID (0 to 7):	String 2:
0	
Advanced	OK Cancel

5.2 Setting up values to visualize

In the tree of the *"Project Explorer"* under *"Drivers"* -> *"SIETH"* you can find a *"Main Driver Sheet"*. Double-click either this or any other driver sheet:

💽 🗋 - 🐂 🖬 - 💽 🕢 =	InduSoft Web Studio - SIETH - MAIN DRIVER
Home View Insert Project	Help
Paste 678 Find	Image: Stop Tasks Database LogWin Image: Convert Resolution Image: Convert Resolution Stop Tasks Database LogWin Image: Convert Resolution Image: Convert Resolution Stop Tasks Database LogWin Image: Convert Resolution Image: Convert Resolution Stop Tasks Database LogWin Image: Convert Resolution Image: Convert Resolution Stop Tasks Database LogWin Image: Convert Resolution Image: Convert Resolution Stop Tasks Database LogWin Image: Convert Resolution Image: Convert Resolution Stop Tasks Database LogWin Image: Convert Resolution Image: Convert Resolution Stop Tasks Database LogWin Image: Convert Resolution Image: Convert Resolution Stop Tasks Database LogWin Image: Convert Resolution Image: Convert Resolution Stop Tasks Database LogWin Image: Convert Resolution Image: Convert Resolution Stop Tasks Database LogWin Image: Convert Resolution
Project Explorer 4 ×	Remote Management
Project: test.APP MAIN DRIVER SHEET OPC OPC UA OPC Vi OPC Vi	Description: MAIN DRIVER SHEET Disable: Read Completed: Read Status: Write Completed: Write Status: Min:
	Tag Name Station I/O Address
	* · * · * · * · * ·

On this *"Driver Sheet"* you have to configure any values you choose to visualize.

• After double-clicking the first empty cell in the column *"Tag Name"* a dialog window opens, in which to choose the tag to specify. In this example the tag is called *"Mbyte"*:



• Enter the IP address of the adapter, the rack number and the slot (the PLCs MPI address) under the column *"Station"* using this format:

<IP address> : <Rack> : <Slot>

🔔 🗋 🖻 * 🖷 🖬 * 🖸 🕢 🐔 🔹		InduSoft Web Studio	- SIETH - MAIN DRIVER SHEET
Home View Insert Project	Help		
A Cut Cut Copy Paste S Find Clipboard Clipboard	Constant Con	e LogWin G Tools	izard Resolution Controls
Project Explorer P ×	SIETH - MAIN DRIVER	SHEET ×	
	Description: MAIN DRIVER SHEET Disable: Read Completed: Rea Write Completed: Write	H Status:	
	Tag Name	Station	I/O Address
	1 Mbyte	192.168.4.199:0:2	Read
	*		Read

• Adjacent enter the memory address of the variable you want to access on the PLC under the column *"I/O Address"* (for further information please consult the *"SIETH"* driver manual):

		InduSoft Web Studio	- SIETH - MAIN DRIVER SHEET
Home View Insert Project	Help		
A Cut Image: Copy Paster Image: Copy Tasks Image: Copy Tasks Image: Copy Connection	C Run Stop Stop C Run Tasks Database Spy	LogWin Verify Register	Azard Resolution Controls Azar Replace Global Replace Replace Bio Remove unu Replace Bio Remove unu
Clipboard Local Management	Remote Management	Tools	1 N
	Description: MAIN DRIVER SHEET Disable: Read Completed: Read : Write Completed: Write S	Status:	
	Tag Name	Station	I/O Address
	1 Mbyte 1	192.168.4.199:0:2	MBO Rea
	*		Rea
	*		Rea
	*		Rea
	*		Rea

• Important for S7-200 users! The V registers of the S7-200 can be read by stating the DB1 registers. (For further information please consult the *"SEITH"* driver manual):

💽 🗋 • 🐂 🖬 • 💽 🕢 🔻		InduSoft Web Studio	- SIETH - MAIN DRIVER SH	EET
Home View Insert Project	Help			
A Cut Paste ro Find Copy Conner	C C Download	Win Wirfy Import V Win Verify Register	Vizard Resolution Controls	ice ive unusec t tags data
Clipboard Local Management 1×	Remote Management	Tools	9	Ta
Project Explorer 4 X	SIETH - MAIN DRIVER SHEET	×		
	Description: MAIN DRIVER SHEET Disable: Read Completed: Read Completed: Write Completed: Write Statu	s: Min:		
	Tag Name	Station	I/O Address	Ac
	1 Mbyte 192.1	68.4.199:0:2 🤇	DB1.DB0	Read+V
	*			Read+W

• Save the *"Driver-Sheet"* and run the application. The value contained in flag byte 0 (VB0 in a S7-200) will be saved and displayed in the tag *"Mbyte"*.

6 InTouch V9.5 (Wonderware GmbH)

(System Management Console 2.0 Version 5.1)

The following steps must be performed in the described sequence (status July 2007):

6.1 Starting the System Management Console

"Start->Programs->Wonderware->System Management Console"

👔 SMC - [Archestra System Management Console (PCS9)DAServer ManagerDelautt Group@coattarchestra.DASSIDirect. DConfiguration@vew 🔚	
Datei Aktion Ansicht 2	
Acchestry Dystem Management Console (PC3) Default Group Default Grou	
the UTC	~

6.2 Configuring the Device Group

Enter Device Group (later the NETLink[®] will be addressed with this name from the WWClient)

ArchestrA System Management Console (PC39)	Node Type: S7Cp Delimi	ter: .
ArchestrA.DASSIDirect.1	Name	Update Interval (ms)
New_PortCpS7_NETLink NETLink_S7Cp_000 Diagnostics	Netlink-Group	1000

6.3 Configuring the Wonderware Client

"Start -> Programs -> Wonderware Factory Suite -> Common-> WWClient" to establish connection

Node:	J.	•
Application:	DASSIDirect	
Topic:	Netlink-Group	•
Connection 1	In der SMC kor Fype DE	nfigurierte DeviceGrou

If the connection has been set correctly, the following display opens:

500	Wonderware Client			
Eile	Script Connections Item Help			_ @ ×
ЮТ	DASSIDirect Netlink-Group	0x003b8290	0	

Configuring the item

Connections	Begister
DASSIDirect Netlink-Group 0x003b8290	
	Advise
	Unadvise
	Request
	Unregister
ltem	Poke
Z10 String	AdviseEx
Value	UnadviseE
	Done

If the Item configuration is correct and the SIDirect DAServer has been activated, the configured *"Item"* is updated in the *"Wonderware Client"* window.

×
×

7 KEPserverEx V6.2.429.0 (KEPware Inc.)

The following steps must be performed in the described sequence (status November 2017):

7.1 Configuring KEPserverEx

Start program module KEPServerEx, create a new project or right-click in the demo project and select *"New Channel"*.

😳 KEPServerEX 6 Configuration [Co	nnected to Runtime	
File Edit View Tools Runtim	e Help	
	21.	
Allases		
Advanced Tags		
EFM Exporter		
To T Gateway		
Local Historian		
Scheduler		
SNMP Agent		
Date ∇ Time	Source	Event
(i) 08.11.2017 08:00:28	KEPServerEX\R	Scheduler Plug-in V6.2.429.0
(i) 08.11.2017 08:00:28	KEPServerEX\R	IoT Gateway V6.2.429.0
08.11.2017 14:03:12	KEPServerEX\R	Configuration session started by scher as Default User (R/W).
(i) 08.11.2017 14:43:35	KEPServerEX\R	Stopping Siemens TCP/IP Ethernet device driver.
(i) 08.11.2017 14:43:35	KEPServerEX\R	Created backup of project 'C:\ProgramData\Kepware\KEPServerEX\V(
(i) 08.11.2017 14:43:35	KEPServerEX\R	Advanced Tags Plug-in V6.2.429.0
(i) 08.11.2017 14:43:35	KEPServerEX\R	Data Logger Plug-in V6.2.429.0
(i) 08.11.2017 14:43:35	KEPServerEX\R	Alarms & Events Plug-in V6.2.429.0
(i) 08.11.2017 14:43:35	KEPServerEX\R	SNMP Agent Plug-in V6.2.429.0
(i) 08.11.2017 14:43:35	KEPServerEX\R	Media Level Redundancy Plug-in V6.2.429.0
(1) 08.11.2017 14:43:35	KEPServerEX\R	EFM Exporter V6.2.429.0
(i) 08.11.2017 14:43:35	KEPServerEX\R	Connection Sharing Plug-in V6.2.429.0
(i) 08.11.2017 14:43:35	KEPServerEX\R	Security Policies Plug-in V6.2.429.0
(1) 08.11.2017 14:43:35	KEPServerEX\R	Local Historian Plug-in V6.2.429.0
(i) 08.11.2017 14:43:35	KEPServerEX\R	IDF for Splunk V6.2.429.0
(i) 08.11.2017 14:43:35	KEPServerEX\R	Scheduler Plug-in V6.2.429.0
(i) 08.11.2017 14:43:35	KEPServerEX\R	IoT Gateway V6.2.429.0
(i) 08.11.2017 14:43:35	KEPServerEX\C	Runtime project has been reset.
08.11.2017 14:44:00	KEPServerEX\R	Configuration session assigned to scher as Default User has ended.
08.11.2017 14:50:29	KEPServerEX\R	Configuration session started by scher as Default User (R/W).
•		· · · · · · · · · · · · · · · · · · ·
Ready		Default User Clients: 0 Active tags: 0 of 0

Select device driver "Siemens TCP/IP Ethernet"

6	Add Channel Wizard	•
	Select the type of channel to be created: Siemens TCP/IP Ethernet Image: Siemens TCP/IP Ethernet Image: Siemens TCP/IP Ethernet	0
		Weiter Abbrechen

Enter a new name or leave the existing one and "Continue"

(Add Channel Wizard	×
	Specify the identity of this object. Name: Channel 1	
		Weiter Abbrechen

Select the computer's own network card

3	Add Channel Wiza	rd	×
S	Specify the name of a ne letwork Adapter:	twork adapter to bind or allow the OS to select the default.	
	Available Network A	Adapters	
	Binding	Adapter Name	
		Default	
	10.0.0.100	Realtek PCIe GBE Family Controller #2	
	172.16.0.3	Realtek PCIe GBE Family Controller #2 1	
	172.16.26.5	Realtek PCIe GBE Family Controller #2 2	
	192.168.4.4	Realtek PCIe GBE Family Controller #2.3	
	192.168.20.8	Realter PCIe GBE Family Controller	
		OK Cancel	ŀ

Leave default optimizations and confirm with "Continue".

Add Channel Wizard	
Choose how write data is passed to the underlying communications driver when more than one write exists in the write queue.	
Optimization Method:	
Write Only Latest Value for All Tags	
Write Only Latest Value for All Tags	
Write Only Latest Value for All Tags Specify the ratio of write operations to read operations, based on one read per configurable number of writes. Duty Cycle: 10	
Write Only Latest Value for All Tags Specify the ratio of write operations to read operations, based on one read per configurable number of writes. Duty Cycle: 10	

Select the Floating-Point Values to *"Unmodified"* and confirm with *"Continue"*

G	Add Channel Wizard	×
	Choose how to send invalid floating-point numbers to the dient. Floating-Point Values: Unmodified Image: Image: Image:	
	Weiter Abbreche	en

Finish" the channel settings.

	Identification		-
	Name	Channel1	_[
	Description		
	Driver	Siemens TCP/IP Ethemet	
	Diagnostics		_
	Diagnostics Capture	Disable	
-	Behemet Settings		
	Network Adapter	Realtek PCIe GBE Family Controll	-
-	Write Optimizations		
	Optimization Method	Write Only Latest Value for All Tags	
	Duty Cycle	10	_
-	Non-Normalized Float Hand	ling	
	Floating-Point Values	Unmodified	

Select "Click to add a device" to assign the NETLink[®] as a device



Enter a new name or leave the existing one and "Continue"

G	Add Device Wizard	
:	Specify the identity of this object. Name:	
		Weiter Abbrechen

Select device model "S7-300"

Add Device Wizard	×
Select the specific type of device associated with this ID. Options depend on the type of communications in use. Model:	
Weiter Abbrech	en

Enter the IP address of the connected NETLink[®] here.

(Add Device Wizard	×
S	pecify the device's driver-specific station or node.	
[172.16.0.49	
		Weiter Abbrechen

Leave default timing and confirm with "Continue".

0	Add Device Wizard	×
	Specify the method for determining how often tags in the device are scanned. Scan Mode:	
	Respect Client-Specified Scan Rate	
	Initial Updates from Cache:	
	Weiter	ien

No changes at this point "Continue"

	×
G Add Device Wizard	
Define the maximum amount of time, in s	econds, allowed to establish a connection to a
Connect Timeout (s):	
Specify an interval, in milliseconds, to de from the target device to indicate comple	termine how long the driver waits for a response tion.
Request Timeout (ms):	
2000	
Indicate how many times the driver send request to have failed and the device to Retry Attempts: 2	s a communications request before considering the be in error.
Define how long, in milliseconds, the drive target device.	er waits before sending the next request to the
Inter-Request Delay (ms):	
0	
	Weiter Abbrechen

No changes at this point "Continue"



No changes at this point "Continue"

		×
\bigcirc	Add Device Wizard	
	Select the automatic tag generation action to be taken on device startup.	
	On Device Startup:	
	Do Not Generate on Startup 🔹 🕢	
	Indicate the preferred method of avoiding creation of duplicate tags.	
	On Duplicate Tag:	
	Delete on Create	
	Indicate a tag group name for new generated tags. If empty, generated tags are added at the device level.	
	۲	
	Instruct the server to automatically create sub groups for automatically generated tags.	
	Allow Automatically Generated Subgroups:	
	Weiter Abbrech	en

The communications port for RFC 1006 is 102 (default)

G	Add Device Wizard
	Set the TCP/IP port number configured for this device.
	Port Number:
	Enter the device port number where the NetLink adapter is connected. MPI ID:
	0
	Weiter Abbrechen

The link type must be set to "OP"!

	Add Device Wizard
c	perify the local (PC) unique address for this device connection in bexaderimal.
ī	pod TSAP:
Γ	4D57
L	
	pacifu the versate (deuise) unique address far this connection in heurodesired
5	emote TSAP
Γ	4D57
L	
S	elect the type of connection link to be used in communications.
L	ink Type:
U	
E	PC ▼」 🥑 nter the rack number where this CPU resides.
E	PC v W nter the rack number where this CPU resides. PU Rack:
E C	PC V Inter the rack number where this CPU resides. PU Rack:
E C	PC V Inter the rack number where this CPU resides. PU Rack:
E	PC V nter the rack number where this CPU resides. PU Rack: D Inter the slot number where this CPU resides.
E	PC V nter the rack number where this CPU resides. PU Rack: 0 0 0 0 0 0 0 0 0 0 0 0 0
E	PC V nter the rack number where this CPU resides. PU Rack: 0
	PC V nter the rack number where this CPU resides. PU Rack: 0
E	PC • PU Rack: • D • Inter the slot number where this CPU resides. PU Slot: • 2 •
	PC Veiter Model

Leave byte order at "Big Endian(S7 Default)".



No changes at this point "Continue"

	Add Device Wizard
5	Select the source for tag import.
1	Tag Import Type:
[Step 7 Project File 🔹 💿
L	ocate and select the Siemens Step 7 project file from which to import tags.
ŝ	Step 7 Project (*.S7P):
5	Step 7 Project (*.S7P):
[Step 7 Project (*.S7P):
	Step 7 Project (*.S7P):
2 	Step 7 Project (*.S7P): Image: Comparison of the step 7 project for which tags should be generated. Program Path:
9 	Step 7 Project (*.S7P):
9 	Step 7 Project (*.S7P): Image: Select the PLC program within the Step 7 project for which tags should be generated. Program Path: Image: Select the PLC program within the Step 7 project for which tags should be generated.
9 	Step 7 Project (*.S7P): Image: Comparison of the step 7 project for which tags should be generated. Program Path: Image: Comparison of the step 7 project for which tags should be generated.
9 	Step 7 Project (*.S7P): Image: Comparison of the step 7 project for which tags should be generated. Program Path: Image: Comparison of the step 7 project for which tags should be generated.

"Finish" the device settings.

	Identification		-
	Name	Device1	
	Description		
	Driver	Siemens TCP/IP Ethernet	
	Model	S7-300	_
	Channel Assignment	Channel1	_
	ID	172.16.0.49	
	Operating Mode		
	Data Collection	Enable	
	Simulated	No	
-	Scan Mode		
	Scan Mode	Respect Client-Specified Scan Rate	
	Initial Updates from Cache	Disable	
_	- · · · ·		

The following steps are provided as an example only and are not obligatory for customer applications. They serve as a visual check whether data exchange is taking place. By clicking *"Click to add a static tag"* in this example, only one item will be assigned.

KEPServerEX 6 Configuration [Connected to Runtime]							
File Edit View Tools Runtime Help							
📄 🗅 💕 🗟 🛃 🏶 🛅 🖏 🐿 🤪 🖓 🚰 💌	9 🔏 📭 🛍 🗙 🔛						
□ 🔂 Project	Tag Name / Address						
En Character and a static tag. Tags are not required, bu							
المعادي							
Advanced Tags							
Alarms & Events	Ξ						
🗄 📲 Data Logger							
EFM Exporter							
IDF for Splunk							
⊕·ﷺ IoT Gateway							
Eccal Historian							
	▼ < ►						
Date 🗸 Time Source E	Event						
(i) 08.11.2017 14:43:35 KEPServerEX\R I	oT Gateway V6.2.429.0						
(i) 08.11.2017 14:43:35 KEPServerEX\C F	Runtime project has been reset.						
14:44:00 KEPServerEX\R 0	Configuration session assigned to scher as Default User has ended.						
14:50:29 KEPServerEX\R (Configuration session started by scher as Default User (R/W).						
(i) 08.11.2017 15:59:28 KEPServerEX\R 5	Siemens TCP/IP Ethernet device driver loaded successfully.						
(i) 08.11.2017 16:25:24 KEPServerEX\R S	Starting Siemens TCP/IP Ethernet device driver.						
(i) 08.11.2017 16:25:24 Siemens TCP/I S	Siemens TCP/IP Ethernet Device Driver 'V6.2.429.0'						
4	· · · · · · · · · · · · · · · · · · ·						
Save the current project.	Default User Clients: 0 Active tags: 0 of 0						

The flag word zero will be processed in the sequential program of the connected CPU.

🞯 Property Editor - Channel1.D)evice1	—
Property Groups		
General	Name	
Scaling	Description	
	Data Properties	
	Address	
	Data Type	Default
	Client Access	Read/Write
	Scan Rate (ms)	100
	Name Specify the identity of this object.	
	Defaults	DK Help

Complete with *"Apply"* and *"OK"*

7.2 Starting the OPC quick Client

The Quick Client can be started via the marked icon:

🔯 KEPServerEX 6	Configuration [Con	nected to Runtime]					×	
File Edit View	Tools Runtime	Help							
	2 🔅 🖾 🍇	🕾 🔂 🚙 🗅	57 % 4	6 🗈 🗙	<u>ac</u>				
🔂 Project				Tag Nam	e	/ /	Address		
⊨ (徽) Conne	ctivity			MW0			MW0		
Channell									
	Device1								
- Aliases	5								
	ced Tags		-						
Alarms	s & Events		=						
Data La	ogger								
	kporter Solunk								
iDF for and the lot Gat	teway								
	Historian								
Schedu	uler			I					
	Agent		*	•	11			- F	
Date	Time	Source	Event					*	
(1) 08.11.2017	14:43:35	KEPServerEX\R	IoT Gatew	ay V6.2.429.)				
(i) 08.11.2017	14:43:35	KEPServerEX\C	Runtime p	project has b	een reset.				
08.11.2017	14:44:00	KEPServerEX\R	Configura	tion session	assigned t	to scher as Def	ault User has end	ded.	
08.11.2017	14:50:29	KEPServerEX\R	Configura	tion session	started by	scher as Defa	ult User (R/W).		
(i) 08.11.2017	15:59:28	KEPServerEX\R	Siemens T	CP/IP Ether	net device	driver loaded	successfully.		
(1) 08.11.2017	16:25:24	KEPServerEX\R	Starting Si	iemens TCP/	IP Etherne	t device drive	r.		
(i) 08.11.2017	16:25:24	Siemens TCP/I	Siemens T	CP/IP Ether	net Device	Driver 'V6.2.42	29.0'		
	· · · · · · · · · · · · · · · · · · ·								
						<i>a</i>		•	
Open a project.				_	Default Us	er Clients: 0	Active tags: 0 of	ru	

The program module *OPC Quick Client* opens and the status of the item is displayed by marking the channel and device you previously created

OPC Quick Client - Unbenannt *									
File Edit View Tools Help									
🗅 📽 🔒 🌿 📽 🗳 🕼 👗 🖻 🔍 🗙									
□-:mi Kepware.KEPServerEX.V6	Item ID 🗸	Data Type	Value	Timestamp	Quality	Update Count			
DataLogger	Channell.Device1Rack	Byte	0	16:29:14.203	Good	1			
🔛 _System	Channel1.Device1Slot	Byte	16	16:29:14.203	Good	1			
Channell_System Channell_Oystem Channell.Device1 Channell.Device1 Channell.Device1 Channell.Device1 Channell.Device1 Channell.Device1 Channell.Device1 Channell.Device1 Channell.Device1 Channell Channe	Channell.DeviceL.MW0	Word	26624	16:29:31.504	Good	17			

8 PROCON-Win V3.2 (GTI Control)

The following steps must be performed in the described sequence (Version July 2011):

8.1 Configuring the driver and connection

- Open PROCON-WIN 5 VisuDesigner.
- Create a new project by pressing "New Project"



- Choose "Compact" and name the project.
- Confirm with "OK".



A new project is created and opened immediately.

• Double-click "Tag".



• From the menu bar click on "Tag" -> "Driver selection"

	PROCON	WIN 5.3 VisuDesi	igne	- Project 'C:\PROCON	1-WINW	isuDesigne	WorkData\NETLink_RFC1	006_	en'			
F	le Edit Vi	ew Tools Window	Tag	Help								
1		🖬 🗟 📰	2	New 🕨	(cu -	4 D 🗈	Find and Replace -		1) • 🏦 🕘 🌘	17 🚠	
Proj	ect tree		(AP)	Show tag class editor								×
		Project Alert	8	Driver selection	7	Type +	Structure instance element	PC	-12	Field Size +	Priority +	Access Level 🗲
	-01	Logbook	(C)	PLC import		A	A	A		=	=	=
		Network	-	Hide Filterline	ariable	1.0 Num	*			1	0	0
		Ribbons	H	Tilde Fillerine	ariable	01 Bool	*			1	0	0
	-21	Touch		Show Group By Box	able	a _b String	*			10	0	0
		Style	•3•	Reset Sizing		01 Bool	*			1	0	0
	Pro	Cess connection		Fit To Screen		01 Bool	*			1	0	0
		Struct	-	Fit To Contents								
	Dat	a Alerts and Groups		Reshow columns								
		Alertdisplaygroups			1							
	-7	System Alerts	~									
	Counted tag		^									
Ξ.	ag count	with arrays										
	loolean	3										
	oung Iotal	5										
⊡ '	agcount	without array										
1	lumeric	1	~	<								>
2	HELMHOLZ	Nuschnat Created n	iew Pr	oject: NETLink_RFC1006_e	en							

- Select "S5-S7-COMBI RFC 1006".
- Click the button contained in the cell under the column *"INI-File"*.

												? 🛛
river Select	ion											
la Antina		Name da	D -D	INILEILA JE	A.,	طر مما	Outo do		طريق	Nume de	Chrine at	
Is Active		Name 🕶		INI-File 74		Inp -	Uutp 🕶	BIDI 14		Nume 🕶	Stin >	
			A	A								
2		3964(R)	T rei	short_na								
3		Hilscher	T rei	short_na	V	~	 Image: A set of the set of the	 Image: A set of the set of the	~	~		
1		NetLink	T rei	short_na	·	 Image: A start of the start of	Image: A start of the start	 Image: A start of the start of	Image: A start of the start	Image: A start of the start		
5 10	V	S5-S7-C	T rei	short			 Image: A start of the start of	 Image: A start of the start of		 Image: A start of the start of	V	
3		EtherNet/	T rei	short_na		 Image: A start of the start of		 Image: A start of the start of	 Image: A start of the start of	 Image: A start of the start of		
7		BECKHO	T rei	short_na								
		OC ADTI	T ·			Ē			_			× 🚩
											Cance	
									<u> </u>	Ĺ	00,100	

- A text editor opens.
- Search for this in color highlighted line:



• The highlighted line is to be replaced with the following:

ag0 = "/type=s7_osi /ip_adr=XXX /rtsap=[02.0Y] /wtsap=[02.0Y] /ltsap=[02.0Y] /uni=yes"

- In place of the "XXX" enter the IP address of the NETLink
- Replace every "Y" with the MPI address of the PLC connected to the NETLink
- The resulting string should look something like this:

sut Editor	
SA E GIO	
	100
; Beispiel einer TCP/IP-Verbindung zu einer S5 mit RFC 1006	<u></u>
; ag0 = "/type=s5_osi /ip_adr=213.128.16.100 /rtsap=READREAD /wtsap=WRITWRIT /ltsap=PCPCPCPC"	
; Beispiel einer H I-verbindung zu einer 57 ; ad0 = "/type=s7 h1 /agaddr=080006010000 /rtsap=[03.03] /wtsap=[03.03] /ltsap=[03.03] /uni=ves''	
; Beispiel einer TCP/IP-Verbindung zu einer S7-400 mit RFC 1006	
; agu = "/type=s/_osi /ip_adr=213.128.16.100 /rtsap=[03.03] /wtsap=[03.03] /itsap=[03.03] /uni=yes" : Beispiel einer allgemeinen passiven TCP/IP-Verhindung	
; ag0 = "/type=tcp_p /write_port=1111"	
an0 = "/tune=s7_osi /in_adr=192.168.4.197./ttsan=02.031./wtsan=02.031./ttsan=02.031./uni=ues"	
*	
; Protokollieroption:	
; 	
	>
	OK Cancel

- Close the text editor and driver selection screen by pressing "OK"
- From the menu bar press "*Tag*" -> "*New*" -> "*Num*".

PROCON-WIN 5.3 VisuDes	igne	r - Project 'C:\PROCON	I-WI	N\VisuDes	igne	r\WorkData\NETLink_RFC10	006_	en'			
File Edit View Tools Window	Tag	Help									
🖹 🖆 🗋 🖬 🖼 📰 [1	New >	0,	Bool	ß	D Find and Replace -		1	• 艩 🛞 🤇	al 💎 🚠	
Project tree	2r	Show tag class editor	1.0	Num							×
Project	69	Driver selection	ab	String	-	Structure instance element 🛛 🛥	PC	4	Field Size →	Priority +	Access Level 🖛
- Logbook		PLC import		A	-		A		=	-	=
Network	7	Hide Filterline	ariat	ile 1. 0 Nu	m	*			1	0	0
Touch		Show Group By Box	able	a Str	ing	***			' 10	0	0
Style	-	Reset Sizing		O ₁ Bo	ol	*			1	0	0
Tag		Fit To Screen		O1 Bo	ol	*			1	0	0
Struct	-	Fit To Contents									
Data Alerts and Groups		Reshow columns									
- Alertdisplaygroups											
System Alerts	~										
Counted tags 0	^										
Tag count with arrays											
Numeric 1											
Boolean 3											
String 1											
Total 5											
Tag count without array											
Numeric 1	~	<									>
G HELMHOLZ\luschnat Created n	iew P	roject: NETLink_RFC1006_e	en								

• Fill the table with the following values:

Name	user-defined
Decimal places	0
Min PLC	-128
Max PLC	127
Min PC	0
Max PC	256
Driver	S5-S7-COMBI RFC 1006
IO	Input
Baustein-Typ	MERKER
Format	S7-BYTE

• Values not defined above are left at default.

Name		ą	Туре	-	S +	-	F-P	-	+		M⊀	M	-	Mi 🕁	М ⊀	De	efa +¤	-	1-10	Driver +	T	+	-	[1]	-10	-	-10	[4]	-10	Į.‡₽
		1			A	A	=	=	-	-	A	A	1	A	A	A		a I	A	A	A		A	A		A	A	A		A
1	StaticBooleanOff		Bool		*		1	0	0											Merker										
2	StaticBooleanOn		Bool		*		1	0	0								~			Merker										
3	DefaultStringVariable		, String		*		10	0	0							De	fault		1.0											
4	DefaultBooleanVariable		Bool		*		1	0	0											Merker										
5	DefaultNumericVariable		l.o Num		*		1	0	0	2	0.00	10.0	00 0	0.00	10.00	0.0	10			Merker										
6	NETLink		l.o Num		*		1	0	0	0	-128	127	0	0	256	0				\$5-\$7-C	+	11)	MERKER		0	0	S7-	BY	

• Save the project (STRG+S).

8.2 Creating a Picture

• Right-click on "Pictures" and select "New".

PROCON-WIN 5.3 VisuDesigner - Project 'C:\PROCON-WINWisuDesigner\WorkData\NETLink_RFC1006_en'																				
File Edit View Tool	ls Windo	w Tag	Help																	
	s #		X 🔑 🖁	🔒 👰 l 🤊 • (° - l ,	8 [6	2	n						:	• 狩	67			-	w 🖬 🏅
Project tree		4	👧 Startpag	ge 💌 Tag																×
ODBC-Co	onnection er		Name	4	Тур	е	-1	S +₽	-10	F-10	-12	-12	÷	Min 🕫	M +⊐	+0	M +⊐	D 🕫		Driver
Timeswite	ch				A			A	a	=	-	-	-	A	A	A	A	A	a a	A
🕀 间 Picture			1 [DefaultNumericVariable	1.0	Num				1	0	0	2	0.00	10.00	0	10.00	0.00		Merker
- 🔯 Ala 🔝	New			efaultBooleanVariable	⁰ 1	Bool	1			1	0	0								Merker
🔚 Lo 🐖	New sys	stem pict	ure	efaultStringVariable	ab	String				10	0	0						Def	1.0	
🖻 🌔 Script	Close al			taticBooleanOn	⁰ 1	Bool				1	0	0						 Image: A start of the start of		Merker
- 🔄 Gid	Delete F	Vietuwe		taticBooleanOff	⁰ 1	Bool		*		1	0	0								Merker
🔄 Ma 🛤	Deleter	nuture		ETLink	1.0	Vum		Þ		1	0	0	0	-128	127	0	256	0		\$5-\$7-COM
	Sort by	Name																		
E Picture prope	Sort by	Number																		
Pictures 0																				
🗆 License																				
Pictures allowe 65534	1																			
			-																	
-																				
MELMHOLZ\luschnal	t Create	d new P	roject: NETLi	nk_RFC1006_en																

- A new Picture is created and displayed
 Click the tab *"Dynamic"* under *"Items"* and then *"Numeric* Field"

• Now right-click on the white area beneath "Dynamic Symbol" and choose "New" -> "Numeric Digit"

PROCON-WIN 5.3 VisuDesigne	r - Project 'C:\PROCON-WINWisuDesigner\Work[DataWETLink_RFC1006_en' 📃 🗖 🔀
File Edit View Tools Window Pict	ure Help	
	X 🌽 🖨 🖳 🔊 • 🛛 🍟 🔍 🖳 🖳	
Arial 💌 9 💌 🖪	<i>I</i> <u>U</u> <u>\$</u> <u>⊿</u> + <u>∎</u> + <u>∎</u> + <u>≡</u> + <u>≡</u> + <u>≡</u> +	Ξ·■· ; □□○○σ· Λ λ
🚺 17 * 💼 Te * 🖄 💅 * 🚍 *	🖪 • 🖸 • 💂	

Project tree 7	🟡 Startpage 🌸 Tag 🔳 Picture_00000001	× Items – –
ODBC-Connection		Static Dynamic A0
Timeswitch		E 17 💼 📧 🖄
Picture		
Logbuchfenster		
🚺 (00001) Picture_00 🔳		Numeric Field
🖃 🕼 Script		Name Attribute group
💭 Global		C Datail
Macro 💽		
<	8	List
Picture propertys	(1024/759) (226/76)	Symbol
Number 1	[1024/700] [320/70]	Thumbnail
Number (hex) UUU1h	Propertys	From #
Type Startup picture	Picture_00000001	Ta Alay
Size 1024x768 px	Object	Numeric Digit
	Picture 00	Boolean Digit Boolean Digit
	The conc_oom	
FELMHOLZ\luschnat Created new F	roject: NETLink_RFC1006_en	

• Press the button contained in the cell under column "*Instance Value*" row "*Value*".

NumericDigit_0	Carls Default view	🝶 Tag view			
	Object	Attribute group	Attribute	Class value	Instance value
	🖃 🚥 NumericDigit_0 📲	🗊 🍺 Display	Value		1.0 DefaultNumeric.
			DB-Access	No DB-Access	
			- Transparency		
- Attribute group -			Font	Arial; 12pt; Regular;	
Display			Text Color	Color (A=255, R=0	
V Ar Format			Background color	U LOIOF (A=255, H=1	
🗌 🏑 Input	6	🖹 ᄸ Format	Number system	Decimal	
Position			Zeros before decimal		
🔲 🔣 Visibility			Define format		
O Rotation					
📄 🙀 Blinking					
🗌 🥥 Swell					

• Choose the afore created tag and close the window with *"OK"*.

					_		_	
NETLink							_	
Name	ą	Туре	-12	Structure instance element	-10	Field Size	4	Priority
		= Nur	n	A		=		=
1	DefaultNumericVariable	1.0 Nun	1	*		1		0
2 🕨	NETLink	1.0 Nun	١	*		1		0

- Close "Numberfield Control" by pressing "OK".
- Create an instance of the newly created numeric digit by pulling it on the picture using drag & drop.



• Save the project (CTRL+S) and from the menu bar press *"File" -> "Create Runtime"*.

	PR	OCON-WIN 5.3	VisuDesigner	- Project 'O	: VPROCON	I-WIN\VisuDesig	ner\WorkData\NI	ETLin	k_RFC100	5_en'		X
	=ile	Edit View Tools	s Window Pictur	e Help								
		New Project		🔑 🖨	🔒 🔊 -	· (~ - 🚆 💷 📑	<u> </u>			I III 🧯 📰		Ħ
		Open Project		U S		- 🖻 - 💼 🚍 -	─ · = · = · ■	Ψ.			P Q N D	
Ī		Import Project	2									
T	(Create Runtime)									
P	-	Update Runtime	Ctrl+F2	Startnage	Tan 1	Picture 00000001	1	x	Items			ą
F I		Start Runtime	F5					- ^	Static Dy	namic A0		
		Save Project	Ctrl+S			0				17 I		1
	2	Save Project As				oďo						1
	×	Delete Project				0 00			*			
	P	Close Project							Numeric Fie	eld		
(-	Open Library							Name	012.0	Attribute grou	^
	-	Close Library							Numeri	culgit_u	<u>2866 1921</u>	~
<	8	Print	Ctrl+P	-				×	<	IIII	>	
E	A	Print Preview	Ctrl+Shift+P	024/768)	(245/19)	(152/61)	(45/18)	1 🗘	Items Lave	r		
		Recent Projects	•	opertys	11							ą
		Exit		Picture_00	000001	💎 📑 Defa	ult view 💽 Tag vi	ew	🌛 Instance v	iew 🔚 Autom	ationobjects	
	Size	e 1024x	768 px	Numeri	cDigit_0	Object	Attribute gro		Attribute	Class value	Instance value	
						R Numeri	Geometry		Origin	X	152	
							T		Origin	Y	61	V
2	HE	MHOLZ\luschnat	Save Project: L:	PRUCUN-	NETLink BE	C1006 en pwd						

1

If no start menu entry exists, you can find the file "projects.pcs" in the folder "\PROCON\ WIN\Projects". It can be opened with a texteditor! Open the Windows start menu and select "Aktuelles Projekt" under "All programs" -> "GTI" -> "PROCON-WIN 5.3"

and the second s			
🛅 GTI	•	💼 PROCON-WIN 5.3 🔸	🛅 Tools 🔹 🕨
-	· · · ·		📄 Aktuelles Projekt
			PROCON-WIN VisuCompact
			PROCON-WIN VisuDesigner

• Enter the name of the project in the text file and save it.



- Now start *"PROCON-WIN 5 VisuCompact"*.
 A numeric field containing the content of the flag byte 0 in decimal format should be visible now.



• To close *VisuCompact* double tap "Esc"

9 VisAM Win32 (VISAM GmbH)

The following steps must be performed in the described sequence (status May 2008):

9.1 Configuring VisAM Win 32

Open the program module VisAM editor

- Communication -> Select channels
- Click assignment 1 in the communication channel selection.

🔁 VisAM Win 32 Kommunikationskanäle (VKK) 🛛 🛛 🔀						
Auswahl VKK						
Kommunikationskanal Zuordnung	Kommunikationsmodul Eigenschaften					
0	Offline					
2	unbenutzt					
3	unbenutzt					
5	unbenutzt					
6	unbenutzt					
8	unbenutzt					
9	VOK-TCP/IP (Client)					
10	VDE-Direkt (Ulient) VDE intern (PV-Kopie)					
<u>S</u> chließen	Weiter					

In the selection, select assignment *"Siemens S7 Ethernet ISO on TCP"* as the VKM name and confirm with *"Continue"*.

P	😋 Auswahl VKM	×
	VKK: 1	
	VKM-Name	
	unbenutzt	
	S7 MPI-Bridge (RS232/Ethernet)	
	Siemens SIMATIC S7 MPI-Adapter	
	Siemens SIMATIC S7 Ethernet VisAM	
	Siemens S7 Ethernet Fetch/Write /(S5-Link)	
	Siemens SIMATIC S7-200 PPI-Adapter	
	Siemens S7 Ethernet ISO on TCP	
	Siemens SIMATIC S7 PRODAVE	
	Siemens SIMATIC S7 HMI-Adapter	
	S7 IBH-Net (IBH-Link)	
	S7 ARCOM (Arcnet)	
	Siemens SIMATIC WinAC	
	Ciomono C7 916 (UCCE)	· ·
	<u>S</u> chließen <u>W</u> eiter	

Click the remote name and...

🔁 VKM-Eigens	chaften	\mathbf{X}
VKK: 1	VKM: Siemens S7 Ethernet ISO on TCP	
Fehlertoleranz Remote-Name TSAP	0 192.168.4.38 2/2	
<u>S</u> chließen	<u>W</u> eiter	

...enter the IP address of the NETLink®

VisAM Win 32 Editor	X
Geben Sie Remote-Name ein (maximal 60 Zeichen).	OK Abbrechen
192.168.4.38	

Confirm with "OK" and click TSAP...

VisAM Win 32 Editor	
Geben Sie TSAP ein (maximal 60 Zeichen).	OK Abbrechen
2/2	

...and enter address. In this case 2/2 for bus address 2, rack 0, slot 2 (see the relevant chapters with the "Address conversion table" in the NETLink[®] manual).

Confirm with *"OK"*.

🔁 VisAM Win 32 Kor	nmunikationskanäle (VKK)	×
Auswahl VKK		
Kommunikationskanal Zuordnung	Kommunikationsmodul Eigenschaften	-
0	Offline	
1	Siemens S7 Ethernet ISO on TCP	
2	unbenutzt	
3	unbenutzt	
4	unbenutzt	
5	unbenutzt	
6	unbenutzt	
7	unbenutzt	
8	unbenutzt	
9	V0K-TCP/IP (Client)	
10	DDE-Direkt (Client)	
11	VDF intern (PV-Konie)	•
Schließen	<u>W</u> eiter	

You have now created the communications channel and can apply the settings with *"Close"*.

Select Communication -> VDF Data Field

VDF	VDF Gruppenauswahl Prozessvariablen ?/_/_/_ 🔀															
Gruppe	Gruppe 0															
000	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	Ĩ
016	017	018	019	020	021	022	023	024	025	026	027	028	029	030	031	1
032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047	1
048	049	050	051	052	053	054	055	056	057	058	059	060	061	062	063	L
064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079	L
080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095	l
096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111	l
112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	l
128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	L
144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	l
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	l
176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	Ĺ
192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	l
208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	l
224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	l
240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	l
	<u>□</u> K <u>A</u> bbrechen															

Select Group 0 and click the "000" field to activate process variable selection.

III V	VDF Prozessvariablenauswahl 0/?/_/												
VD	VDF Gruppe: 000 📩 Gruppe 0												
PV Nr.	Global Name	Variablen- Typ	Koppl Kanal	Stations Nummer	s- I r I	Daten bereic	Wort-	Anzał	Modus		Aktu Intvl.	Vorgab	
0	Min. Wert	VDF absolut			0	0	0	1	Zyklisch		max.	2	
1	Max. Wert	VDF absolut)	0	0	0	1	Zyklisch		max.	100	
2	Meldetextadresse	VDF absolut	1)	0	0	0	1	Zyklisch		max.	5	
3		VDF absolut)	0	0	0	1	Zyklisch		max.	0	
4		VDF absolut	1		0	0	0	1	Zyklisch		max.	0	
5						0	0	1	Zyklisch		max.	0	
6		VDF absolut	1)	0	0	0	1	Zyklisch		max.	0	
7		VDF absolut	1)	0	0	0	1	Zyklisch		max.	0	
8		VDF absolut	1)	0	0	0	1	Zyklisch		max.	0	
9		VDF absolut	1)	0	0	0	1	Zyklisch		max.	0	
10		VDF absolut)	0	0	0	1	Zyklisch		max.	0	
11		VDF absolut)	0	0	0	1	Zyklisch		max.	0	
12		VDF absolut)	0	0	0	1	Zyklisch		max.	0	
13		VDF absolut	1)	0	0	0	1	Zyklisch		max.	0	
14		BUGAN	11/2-	2.1/							max.	0	
15			win :	2 Komm	umk	cations	skanat	e (vkk)		max.	0	
16		Auswahl	VKK								max.	0	
17				<u> </u>							max.	0	-
	OK Abbrec	kommu	unikatio Zuo	iskanal Koi idnung Eig	mmur jensc	hikation: haften	smodul			-	1 n	88	
	<u><u> </u></u>			0 Off	fline								
_				1 Sie	emens	s S7 Eth	ernet IS	0 on TC	P				
				2 unt	benut	tzt							

Coupling channel 1 is referenced to the previously defined communications channel. Confirm with *"OK"*.

VisAM Win 32 Editor	X
Aktuelle Änderungen vor d	lem Test abspeichern?
Ja Nein	Abbrechen

Save the settings.

9.2 Starting visualization

Select Project -> Test (hotkey F5)

Test: Unbenannt 🛛 🔀						
C <u>O</u> ffline						
C Online <u>P</u> ro+						
C Online Light						
Online <u>UU</u>						
Parameter:						
I						
Autostart <u>e</u> rzeugen						
<u>Start</u> <u>Abbrechen</u>						

Select "Online UL" and click "Start"

Process visualization opens and the communications link is started.



The connection monitor switches from *"offline"* to *"online"* mode.



The transmission information can be displayed in Info.



10 WinCC V7.4 (Siemens AG)

The following steps must be performed in the described sequence (Version November 2017):

10.1 Add the protocol driver

To parameterize a RFC1006 link in a WinCC project, a new TCP/IP link must first be created in the *'SIMATIC S7 PROTO-COL SUITE.'*

- Right click: Tag Management -> Add new driver...
- Select: ,SIMATIC S7 Protocol Suite.chn'

Add new driver	<u> </u> ×
Suchen in: 🗀 bin 💽 🖛 🗈 📸 🖽 -	
PDLCache	
OPC.chn	
Proribus DP.cnn	
SIMATIC S5 Ethernet Layer 4.CHN	
SIMATIC S5 Ethernet TF.CHN	
SIMATIC S5 Profibus FDL.chn	
SIMATIC 55 Programmers Port AS511.CHN	
SIMATIC 55 Serial 3964R.CHN	
SIMATIC S7 Protocol Suite.chn	
SIMATIC TI Ethernet Layer 4.CHN	
SIMATIC TI Serial.CHN	
System Info.chn	
windows dde.chn	
Dateiname: SIMATIC S7 Protocol Suite.chn Öffnen	
Dateityp: WinCC Communication Driver (*.chn)	

- create a new TCP / IP connection in ,SIMATIC S7 PRO-TOCOL SUITE'
- 'Open' the Tag management.



With right-click: TCP / IP -> System parameter you have to select the correct logical device name in the 'Unit' tab.



In this case, the NETLink[®] Gateway has the IP address 172.16.0.49

• click on ,Properties'

- type in the IP address of the NETLink device
- Enter the rack/slot combination of the end device

Here 172.16.0.49 and 0, 2.

The destination CPU with which we want to communicate has the bus address 2.

Connection Parameter - TCP/	IP 💌
Connection	
S7 Network Address	172.16.0.49
Rack Number:	0
Slot Number:	2
Send/receive raw data	block
Connection Resource:	02
Enter the IP address of the a Example: 142.11.0.123	utomation system.
ОК	Abbrechen Hilfe

10.2 Creating a variable

Under this connection we have just configured, we now have to create a variable.

This is done by right-clicking to open the context menu of the new connection and selecting *'New variable...'*.

	Tags [Neue	/erbindung	Find	Find					
	Name	Comment	Data type	Length	Format	Connection	Gro	*	
1	merker		Unsigned 32-bit value	4	Dword	NeueVerbindung_1			

All NETLink have the IP address 192.168.4.49 on delivery from the factory. • In the properties window of the variable, which was named *'merker'* in this case, we can now select the type of variable by clicking the *'Select'* button.

	<u> </u>	
Address proper	ties	×
Address		
Description		
CPU	T	
Data area	Bit memory 🔻	
Address	Double word 👻	
	MD Length 1	
	Quality Code	
Select the dat	ta area	
	OK Abbrechen Hir	e

Marker byte 0 is configured here.

The following screenshot shows that a variable named *'merker'* now exists under the *'newconnection_1'* connection.

III Tag Management - WinCC Configuration Studi	0							
<u>F</u> ile <u>E</u> dit <u>V</u> iew Too <u>l</u> s <u>H</u> elp								
Tag Management	~		Tags [Neu	eVerbindun	g_1]			
	-		Name	Comment	Data type	Length	Format	Connectio
🕀 🥰 Internal tags		1	merker		Unsigned 32-bit value	4	Dword	NeueVerb
. SIMATIC S7 Protocol Suite		2	*	T				
		3						
Verbindung1		4						
PROFIBUS		5						
NeueVerbindung_4	=	6						
	-	7						
II Slot PLC		8						
TCP/IP		9						
NeueVerbindung_1		10						
PROFIBUS (II)		11						
Industrial Ethernet (II)		12	-	_				
		14		_				
Soft PLC		15						
SIMATIC S7-1200, S7-1500 Channel		16						

If this variable is now included in the initial screen of the WinCC project, for example, a connection will be established to the CPU with address 2 via the NETLink[®] Gateway to read or write marker byte 0 from this address.

Further variables of different types can, of course, be created and used according to the same scheme.

It is also possible to create additional TCP/IP connections in order to communicate not only with the CPU with bus address 2 but also with other CPUs.

11 WinCC flexible 2005/2007 (Siemens AG)

The following steps must be performed in the described sequence (status April 2008):

11.1 Configuring connections

Start WINCC flexible Project and open the connections in the communications register:

- Select communications driver "SIMATIC S7 300/400"
- Interface: Ethernet
- The operator panel address is the local IP address of the computer network card
- Access point: S7ONLINE
- The Control address is the IP address set in $\text{NETLink}^{\texttt{®}}$
- The Slot is the MPI address of the CPU to be addressed

🔡 WinCC flexible Advance	l - ProjektTP170b.hmi	
Projekt Bearbeiten Ansicht Eir	ifügen Forma <u>t</u> Bil <u>d</u> bausteine E <u>x</u> tras <u>F</u> enster <u>Hi</u> lfe	
🔙 Neu 🔻 📂 📙 🗠 – 🖓	🕞 🗙 🕺 🛍 🗸 💞 🚮 👄 🍇 🚛 🌲 🚛 🖬 🗸 🛗 🍜 🛝 SIMATIC S7 300/ 💽 🗸 🤞	≷?⊧?⊾.
Deutsch (Deutschland) 🛛 🖌 🗸		
Projekt 📍 🎗	PIC_1 Stephindungen <= Variablen	🗨 🍋 😒
PR000	V	FRBINDUNGEN
Bilder		
	Name Kommunikationstreiber Online Kommentar	
	Steuerung_1 SIMATIC 57 300/400	
🖃 🦙 Kommunikation	Steuerung_2 SIMATIC 57 300/400 Aus	
Zyklen		
🖃 🚝 Meldungen		
🛛 🙀 Bitmeldungen		
🗄 🌠 Einstellungen		
🗉 🚾 Text- und Grafiklisten		
Benutzerverwaltung R	Pareisherations	
🖃 🦉 Sprachunterstützung	Parameter	
Projektsprachen	TD 1200 mms	Challing
Projekttexte	IP 1708 mono	Station
🕀 😓 🦉 Wörterbücher	Ethernet	
🗄 🚝 Strukturen 🕀 🍆 Versionsverwaltung		
	Bediengerät	Steuerung
	Typ Adresse	Adresse
	⊙ IP 192, 168, 4, 45	192, 168, 4, 38
	Die Adresse kann nur am Gerät	Steckplatz 3
	projektiert werden	Baugruppenträger 0
		☑ Zyklischer Betrieb
		×
🐣 Objekte		

11.2 Configuring the PG/PC interface

In the control panel, open the "*Setting the PG/PC Interface*" module.

- Select the network card with protocol "*TCP/IP*" installed in the computer system as the "*Used Interface Parameterization*".
- Check whether "S7ONLINE (Step7) --> TCP/IP ->..." is active for "Access point of application"
- Confirm with *"OK"*.

PG/PC-Schnittstelle einstellen	X								
Zugriffsweg									
Zugangspunkt der Applikation:									
S70NLINE (STEP 7)> TCP/IP -> 3Con	n EtherLink XL 1(💌								
(Standard für STEP 7)									
Benutzte Schnittstellenparametrierung:									
TCP/IP -> 3Com EtherLink XL 10/1	Eigenschaften								
🕅 TCP/IP -> 3Com 3C900TPO-basiert 🔨	Diagnose								
E TCP/IP -> 3Com EtherLink XL 10/1	Kasima								
TCP/IP -> NdisWanIp									
	Löschen								
(Parametriarung Ihrer NDIS-CPs mit TCP/IP Protokoll (RFC-1006))									
Schnittstellen									
Hinzufügen/Entfernen:Auswählen									
OK Abbr	echen Hilfe								

All variables that are linked to *"Controller_1"* can now be accessed via the RFC 1006 protocol.

12 ZenOn V6.2 (COPA-DATA)

The following steps must be performed in the described sequence (status August 2007):

12.1 Configuring Zenon

Start Zenon and create a new project or adapt an existing one and define variables.

Configuring variables:

🚺 zenOn										_	
Datei Bearbeiten Bilder Option Fenst	er <u>H</u> ilfe										
	b 🕹 🧕		<u>+0</u> +	+]+]+-[]∓		• 1	5 5	1 4 A A	时时户	4 6 5	
💫 🖫 🧤 🕄 🛵 🔸 🛥 Lû	3.9	9 🖽 🕑 🔸		000	D A	Tl		- 4 12 14 10		DI E S	
Projekt Arbeitsbereich											
🖃 🛃 Arbeitsbereich 'D:\HMI-Project 🛋	Status Name	Kennung Einheit	Net D	atenbaustein	Offset	Bit-Nu Au	isrich	Treiber	Datentyp	Nachk	
E TEST_1_VERB (Start	F 7 Filte 7	Filtert T Filter	7 Fi 7	Filtertext 7	Filtert 🍸	Filt 🍸 Fil	ter T	Filtertext	Filtertext 🛐	Filter 🝸	
E 💊 Variablen	DB17		0	17	2	0	0	S7TCP32 - S7 TCP-IP	INT	0	
I reiber	Z11		0	0	11	0	0	S7TCP32 - S7 TCP-IP	UDINT	0	
Datentypen	Z10		0	0	10	0	0	S7TCP32 - S7 TCP-IP	UDINT	0	
	Mw11		0	0	11	0	0	S7TCP32 - S7 TCP-IP	INT	0	
Funktionen Sprachtabelle Archivserver Rezepte Skipting STRATON (IEC 6113 Scheduler Verriegelungen Message Control Menis Report Generator Revoltzer	4/4/0 64/un	begrenzt									
**********										- ×	

12.2 Setting the driver

- Mark "S7 TCP-IP"
- Press "Click here->" in the configuration



12.3 Driver configuration

- *"New"* button:
- Enter data
- (remote IP address = IP address from NETLink[®]
 Remote TSAP = MPI address of PLC)
- First the "Save" button
- Then *"OK"* button

Vebindungsdatei. [Derault.ist	,	
Verbindungsliste:		Busadresse: 0
S7LAN_PI	0	Remote IP address (primăr): 192.168.4.38 Remote IP address (alternativ): Local TSAP: 01.00 (hex) 02.06 (hex)
Neu Löschen	Bearbeiten	Speichern MPI-Adresse AG = 0

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First the "Save" button and only then confirm "OK".

12.4 Integrating variables in images

Configuring images



Finally, start the runtime:



13 Address conversion table

The following table is a parameterization aid for fining the correct settings for Routing over RFC or for remote TSAP in addressed mode. Please note that the rack and slot together fill only one byte which is divided as follows:

- Rack fills the upper three bits (11100000_{bin})
- Slot fills the lower five bits (00011111_{bin})

Bus-addr.	Rack	Slot	TSAP												
0	0	0	0200	32	1	0	0220	64	2	0	0240	96	3	0	0260
1	0	1	0201	33	1	1	0221	65	2	1	0241	97	3	1	0261
2	0	2	0202	34	1	2	0222	66	2	2	0242	98	3	2	0262
3	0	3	0203	35	1	3	0223	67	2	3	0243	99	3	3	0263
4	0	4	0204	36	1	4	0224	68	2	4	0244	100	3	4	0264
5	0	5	0205	37	1	5	0225	69	2	5	0245	101	3	5	0265
6	0	6	0206	38	1	6	0226	70	2	6	0246	102	3	6	0266
7	0	7	0207	39	1	7	0227	71	2	7	0247	103	3	7	0267
8	0	8	0208	40	1	8	0228	72	2	8	0248	104	3	8	0268
9	0	9	0209	41	1	9	0229	73	2	9	0249	105	3	9	0269
10	0	10	020A	42	1	10	022A	74	2	10	024A	106	3	10	026A
11	0	11	020B	43	1	11	022B	75	2	11	024B	107	3	11	026B
12	0	12	020C	44	1	12	022C	76	2	12	024C	108	3	12	026C
13	0	13	020D	45	1	13	022D	77	2	13	024D	109	3	13	026D
14	0	14	020E	46	1	14	022E	78	2	14	024E	110	3	14	026E
15	0	15	020F	47	1	15	022F	79	2	15	024F	111	3	15	026F
16	0	16	0210	48	1	16	0230	80	2	16	0250	112	3	16	0270
17	0	17	0211	49	1	17	0231	81	2	17	0251	113	3	17	0271
18	0	18	0212	50	1	18	0232	82	2	18	0252	114	3	18	0272
19	0	19	0213	51	1	19	0233	83	2	19	0253	115	3	19	0273
20	0	20	0214	52	1	20	0234	84	2	20	0254	116	3	20	0274
21	0	21	0215	53	1	21	0235	85	2	21	0255	117	3	21	0275
22	0	22	0216	54	1	22	0236	86	2	22	0256	118	3	22	0276
23	0	23	0217	55	1	23	0237	87	2	23	0257	119	3	23	0277
24	0	24	0218	56	1	24	0238	88	2	24	0258	120	3	24	0278
25	0	25	0219	57	1	25	0239	89	2	25	0259	121	3	25	0279
26	0	26	021A	58	1	26	023A	90	2	26	025A	122	3	26	027A
27	0	27	021B	59	1	27	023B	91	2	27	025B	123	3	27	027B
28	0	28	021C	60	1	28	023C	92	2	28	025C	124	3	28	027C
29	0	29	021D	61	1	29	023D	93	2	29	025D	125	3	29	027D
30	0	30	021E	62	1	30	023E	94	2	30	025E				
31	0	31	022F	63	1	31	023F	95	2	31	025F				

14 Troubleshooting

The points described here show some typical errors that can occur when using the RFC 1006 function.

Please also refer to the descriptions for trouble shooting in the accordant NETLink[®] manual!

If a problem is not described here and this manual does not provide any information on how to remedy it, the support of Helmholz GmbH & Co.KG will gladly help you to solve the problem.

Q: How can I specify the target station(s) for RFC 1006 communications in WinCC by using the Rack/Slot fields?

A: Since the RFC protocol does not have a default entry for specifying the PROFIBUS/MPI address of a target station (PLC), you will have to use the 2 byte-long TSAP field. The first byte of the TSAP ID is the rack value, while the second is the slot value (the value range for the slot field will often have a maximum value of 31, e.g., in WinCC).

This is why the NETLink unit will have to evaluate both of the TSAP field bytes in order to determine the address of the target station.

- Scenario 1: Your application allows slot field values of up to 126
 - ---> You will have to enter "0" into the Rack field and the PROFIBUS address of your CPU into the Slot field.
- Scenario 2: Your application only allows slot field values of up to 31
 - ---> You will have to enter a 32x multiplier into the Rack field and the missing remainder of the PROFIBUS address into the Slot field.

Address assignments using the Rack and Slot input fields:

- Example 1: Entry for address $17 \triangleq \boxed{0 \ 17}$ Calculation: (0* 32 + 17)
- Example 2: Entry for address $34 \triangleq \boxed{1 \ 2}$ Calculation: $(1^* 32 + 2)$
- Example 3: Entry for address $69 \triangleq \boxed{2 \times 5}$ Calculation: $(2^* 32 + 5)$

Q: Why do I get an address conflict when trying to communicate via Step 7 with the RFC 1006 mode activated even though the station-related address has been adapted in the driver?

A: You have probably changed your own address in the Web interface (default = 0). The NETLink[®] automatically tries to go online with this address on the bus in RFC mode. Conflicts will occur if another node uses the same address. In this case, the altered entry in Step 7 is ignored. Check the status of the active stations in the Web interface.

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A firmware update on

the NETLink® WLAN

formed via the network

must always be per-

Q: How is a firmware update performed in a NETLink[®] adapter?

A: The following steps must be performed:

1) Download the up-do-date "*SHTools*" software from the Company Helmholz web site and install this on your computer.

socket.

2) After "*SHTools*" has been started, make sure that the appropriate NETLink[®] product is activated on the status bar



If there appear another product, so simply press the right mouse button over the status bar and select the product based on its name and order number in the dialog box that then opens.

3) After you have pressed the "*Adapter->Update adapter*" menu, the dialog box shown below appears (example):

Update of	adapter				×
SUD	Description	Version	Volume		Name of bi
	Bios				
	🙀 NETLink BIOS	V1.42	Feb 26 2008		
	NETLink BIOS	V1.42	Feb 26 2008	1	BL_NETLi
	User program				
	NETLink PRO	V1.54	Apr 20 2009		
	NETLink PRO	V1.56	Jun 52009	ŵ	NETLink
	NETLink PRO	V1.42	Feb 27 2008		NETLink
	<u> </u>				
	☑ Don't update if version is equal		Abort		Update

To perform an update from a firmware version lower than V1.42 to a version higher than V1.42, it is first necessary to update to version 1.42 as an intermediate step.

After that, an update to all higher versions can be performed in a further step.

Q: What must I observe when calling your technical support?

A: Please have all relevant data of your system constellation with the connected stations and program modules at hand when you contact technical support at Helmholz GmbH & Co. KG.

15 Directory of Sources

INAT-OPC-Server (http://www.inat.de/index.php?18&backPID=18&tt_products_sof =236)

InduSoft Web Studio v7.0 (http://www.indusoft.com/indusoftart.php?catid=1&name=IWS/ webstudio)

InTouch V9.5 (Wonderware GmbH) (http://global.wonderware.com/EN/Pages/WonderwareInTouch-HMI.aspx)

KEPserverEx V5.4.135.0 (http://www.kepware.com/Products/OPC_Servers.html)

PROCON-Win V5.3 (http://www.gti.de/index.php?id=45)

S7/S5 OPC-Server (http://www.helmholz.de/prod.d,18_30_34.html?p_id=39)

VisAM Win32 (http://www.visam.de/03_produkte/visam/index.php)

WINCC V7.0

(http://www.automation.siemens.com/mcms/human-machine-interface/de/visualisierungssoftware/scadawincc/Seiten/Default.aspx)

WinCC flexible 2005/2007 (http://www.automation.siemens.com/hmi/html_00/products/sof tware/wincc-flexible/index.htm)

ZenOn V6.2 (http://www.copadata.at/de/ger/home.html)