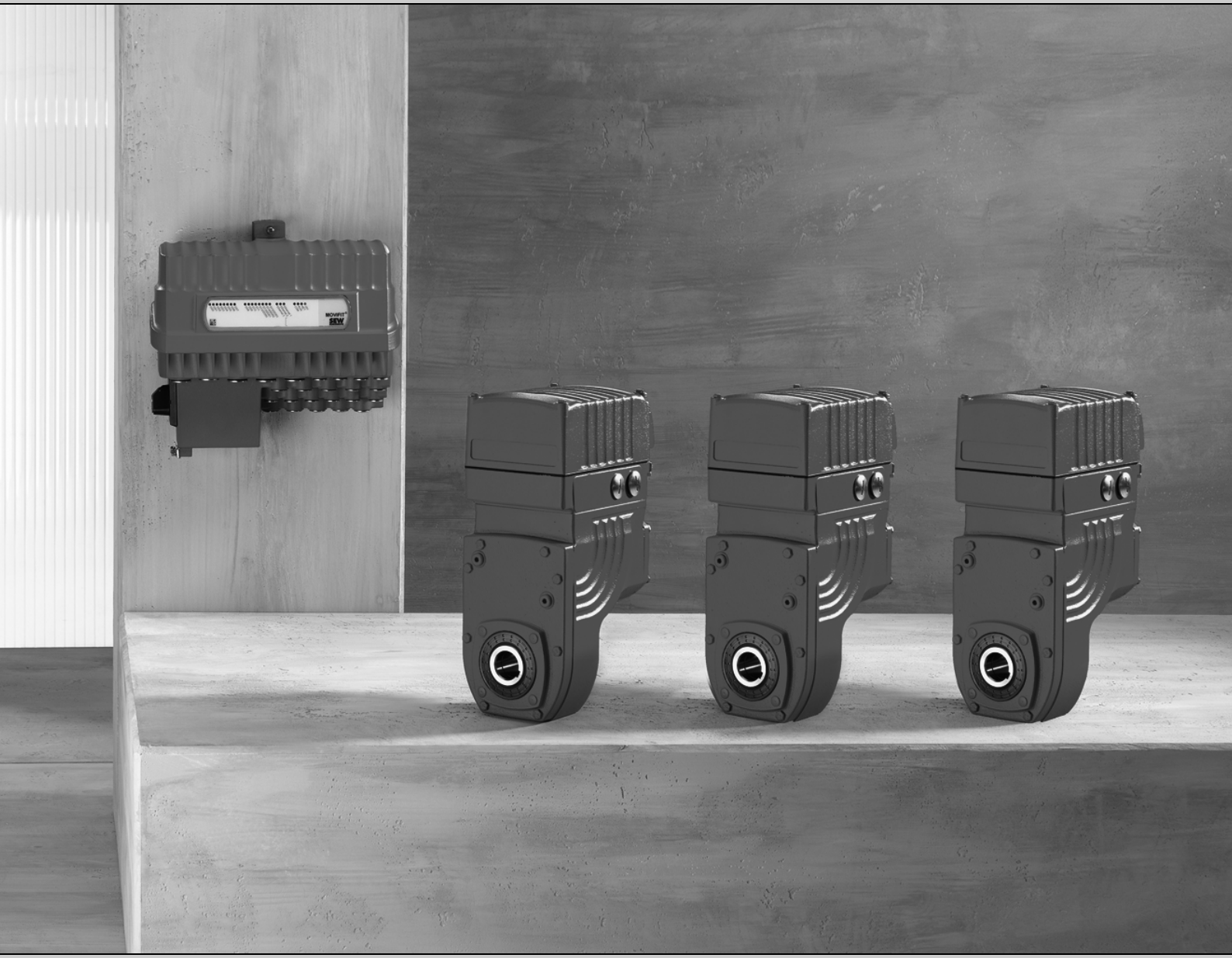
SEW EURODRIVE

Manual

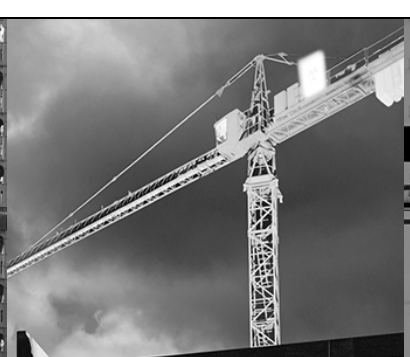


MOVIFIT® SNI

Fieldbus Gateway UFF41B for MOVIGEAR® SNI

Edition 05/2009

16810414 / EN

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1 General Information

1.1 How to use the manual

The manual is part of the product and contains important information on operation and service. The manual is written for all employees who assemble, install, startup, and service the product.

The manual must be accessible and legible. Make sure that persons responsible for the system and its operation, as well as persons who work independently on the unit, have read through the manual carefully and understood it. If you are unclear about any of the information in this documentation, or if you require further information, contact SEW-EURODRIVE.

1.2 Structure of the safety notes

The safety notes in this manual are structured as follows:

Pictogram	SIGNAL WORD
	Type and source of danger. Possible consequence(s) if the safety notes are disregarded. • Measure(s) to prevent the danger.

Pictogram	Signal word	Meaning	Consequences if disregarded
Example:  General danger  Specific danger, e.g. electric shock	**DANGER**	Imminent danger	Severe or fatal injuries
	WARNING	Possible dangerous situation	Severe or fatal injuries
	CAUTION	Possible dangerous situation	Minor injuries
	NOTICE	Possible damage to property	Damage to the drive system or its environment
	**INFORMATION**	Useful information or tip. Simplifies the handling of the drive system.	

1.3 Rights to claim under limited warranty

A requirement of fault-free operation and fulfillment of any rights to claim under limited warranty is that you adhere to the information in the manual. Therefore, read the manual before you start operating the device.

1.4 Exclusion of liability

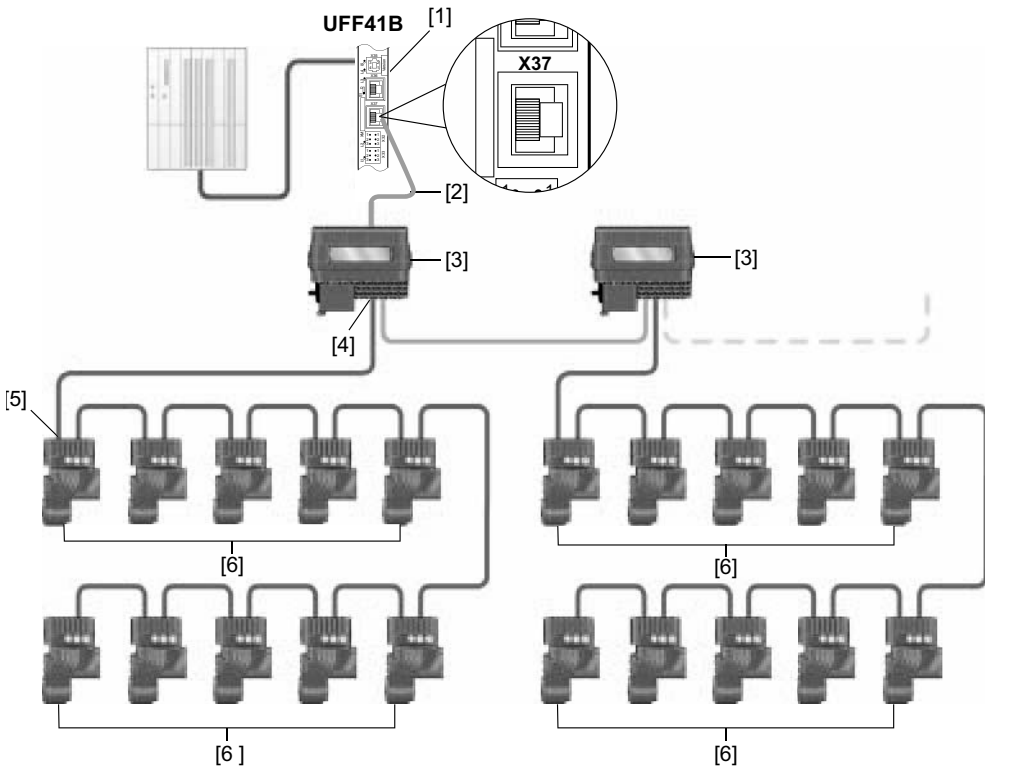
You must comply with the information in the manual and the documentation of the units connected to the fieldbus gateway to ensure safe operation and to achieve the specified product characteristics and performance features. SEW-EURODRIVE assumes no liability for injury to persons or damage to equipment or property resulting from non-observance of the operating instructions. In such cases, any liability for defects is excluded.

1.5 Copyright notice

2 System Description

2.1 Field of application

MOVIFIT® SNI [3] can be operated together with the UFF41B fieldbus gateway [1] if you want to connect a drive system with MOVIGEAR® SNI [6] to a PROFIBUS or DeviceNet fieldbus system. Configuration and parameter setting is carried out using a plug-in in MOVITOOLS® MotionStudio.



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[1] UFF41B fieldbus gateway with SD card OMG42B

[2] Ethernet connection between UFF41B:X37 fieldbus gateway and MOVIFIT® SNI plug connector X1 or X2 (or terminal X3)

[3] MOVIFIT® SNI with Ethernet connection to the next MOVIFIT® SNI

[4] MOVIFIT® SNI, terminal X20:1 – 4

[5] MOVIGEAR® SNI, terminal X1:L1, L2, L3

[6] MOVIGEAR® SNI

3 Project Planning

3.1 Requirements

PC and software The UFF41B fieldbus gateway for MOVIGEAR® SNI is taken into operation using a plug-in in the SEW software MOVITOOLS® MotionStudio from version 5.6 and higher. In order to use MOVITOOLS® MotionStudio, you need a PC with one of the following operating systems: Windows® 95, Windows® 98, Windows® NT 4.0, Windows® 2000 or Windows® XP.

3.2 Required devices

The application can be implemented with the following devices:

- UFF41B fieldbus gateway with OMG42B SD-card for connection to a PROFIBUS or DeviceNet fieldbus system
- MOVIFIT® SNI type MTN11A000-503-E4-.. (standard design)
- MOVIGEAR® SNI (standard design)

3.3 Project planning information

Depending on the selected process data profile (1, 2 or 3 PD per drive, 1 or 2 PD per MOVIFIT® SNI), you can control up to 6 MOVIFIT® SNI in conjunction with 57 MOVIGEAR® SNI drive systems via fieldbus gateway. The various profiles can be combined depending on the functions required in the driveline. It is important during the project planning for a system that the required functions (process data profiles) can be covered by the process data words available. If the number of drivelines requires more than 64 process data words, more than one fieldbus gateway will have to be used.

3.4 Addressing

3.4.1 Important notes

Select the **IP addresses of the fieldbus and MOVIFIT® SNI** in such a way that they are located in the **same subnet**. Besides, you have to enter the complete subnet mask and address of the standard gateway.

The IP addresses of the fieldbus gateway, of MOVIFIT® SNI, and of the PC used for setting the parameters must differ in the range defined in the subnet and must be unequal 0 or 255 in the last byte.

3.4.2 Addressing options of the UFF41B fieldbus gateway

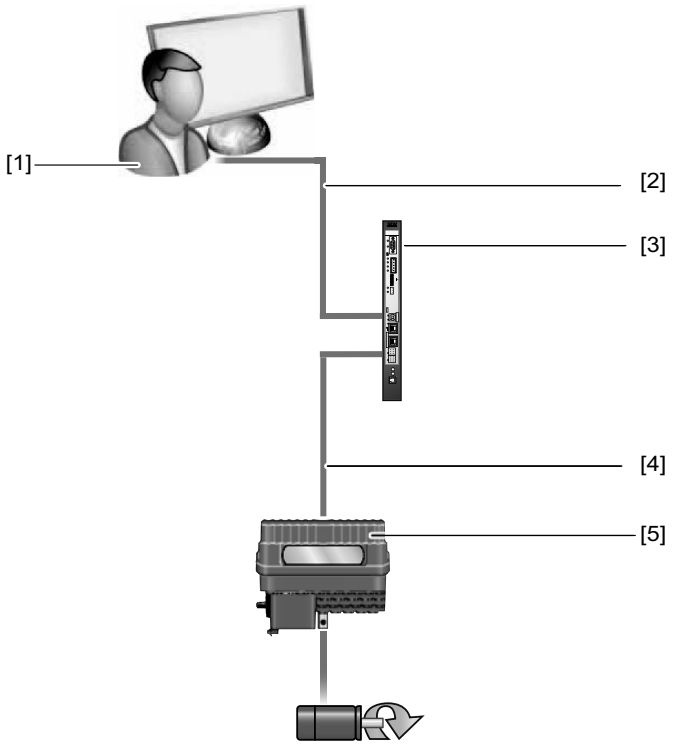
You have two options to set up the engineering access to the UFF41B fieldbus gateway:

- Via USB interface (X35) (see section "Communication via USB")
- Via Ethernet interface (X37) (see section "Communication via Ethernet")

Communication via USB (direct)

Connecting the unit with the PC using an USB connection cable

The illustration shows how the unit (in the example a fieldbus gateway [3]) is connected with the PC [1] using a USB connection cable [2]. It also shows how the fieldbus gateway [3] is connected with the lower-level unit [5].



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[1] PC with USB interface
[2] USB connection cable
[3] Fieldbus gateway (UFx41 in the example)
[4] Ethernet connection between fieldbus gateway and lower-level unit
[5] Lower-level unit (MOVIAXIS® SNI in the example)

Do the following to connect the UFx41B fieldbus gateway with the PC and lower-level units:

1. Plug the **A** connector of the USB cable [2] into a free USB port on your PC [1].
2. Plug the **B** connector of the USB cable [2] into the USB port (X35 with UFF41B) on your fieldbus gateway [3].
3. Connect the SBus interface of the fieldbus gateway [3] with the SBus interface of the lower-level unit [5].

Installing the driver

Before you can communicate with the unit via USB, you have to install the required driver file from the installation path of MOVITOOLS® MotionStudio.

Follow the instructions below to install the driver for USB communication:

1. Connect the unit to a free USB port on your PC.

   Your PC will detect the new hardware and launch the hardware wizard.
2. Follow the instructions of the hardware wizard.
3. Click on [Browse] and go to the MOVITOOLS® MotionStudio installation folder.
4. Enter the following path:

   `"..\Program Files\SEW\MotionStudo\Driver\SEW_USBWIN32_051120"`
5. Click the [Next] button to install the driver.

Configuring USB communication

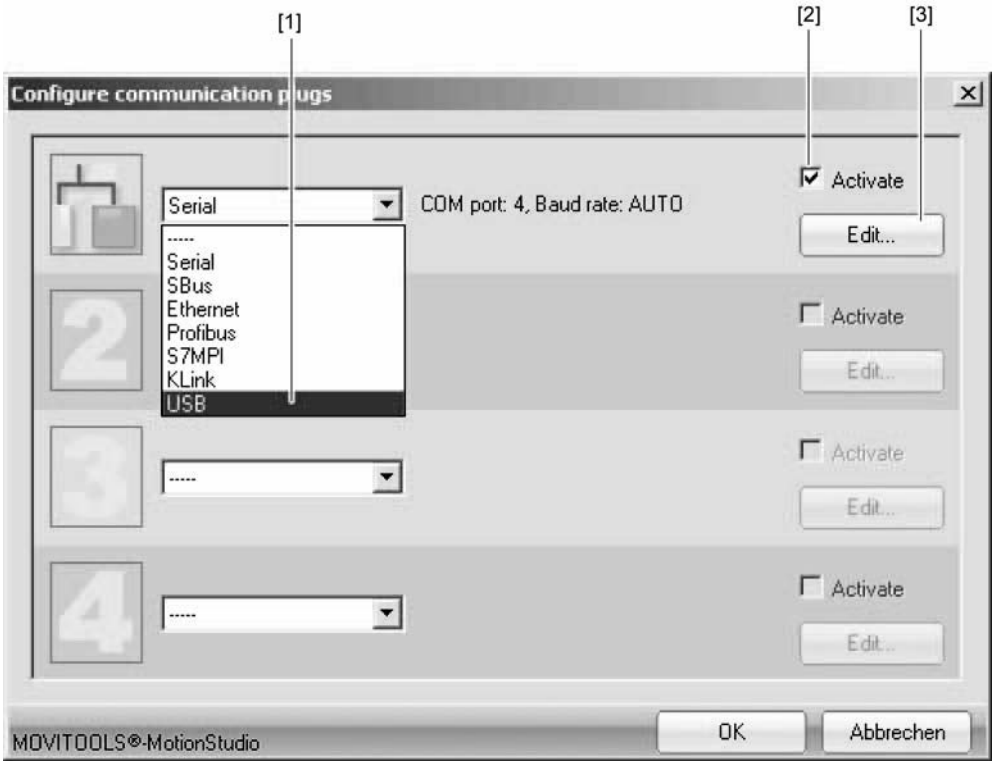
You need a USB connection between your PC and the units you want to configure.

Proceed as follows to configure USB communication:

1. Click on "Configure communication plugs" [1] in the toolbar.

[1] "Configure communication plugs" icon

Doing so will open the "Configure communication plugs" window.



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[1] "Communication type" selection field

[2] "Activate" check box

[3] [Edit] button

2. From the selection field [1], choose the communication type "USB".

   In the example, "USB" is activated as the communication type for the first communication channel [2].

3. Press the [Edit] button [3] on the right side of the "Configure communication plugs" window.

This will display the settings for the "USB" communication type.

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4. Change the set communication parameters if necessary. When doing so, refer to the detailed description of the communication parameters.

USB communication parameters

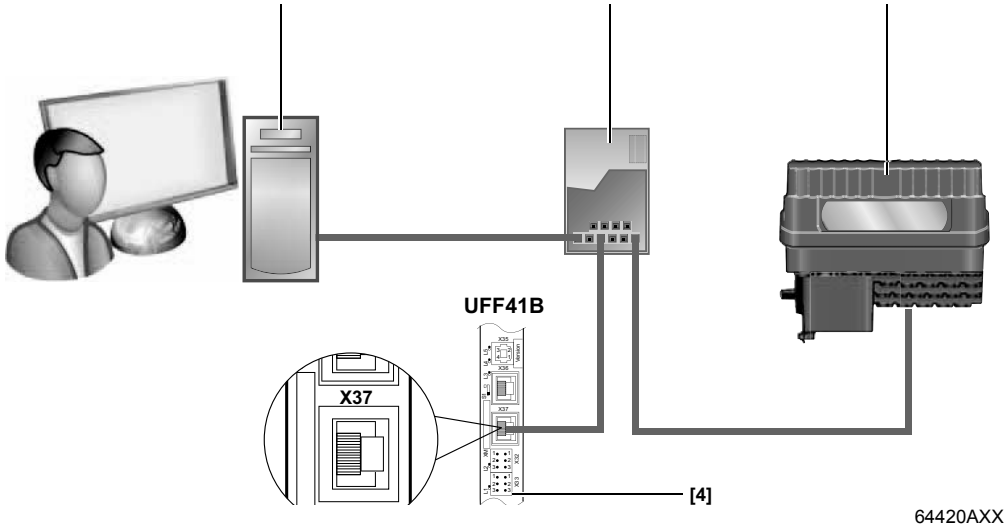
The following table describes the communication parameters for the USB communication channel:

Communication parameters	Description	Note
Timeout	Waiting time in milliseconds that the master waits for a response from a slave after it has sent a request.	Default setting: 350 ms

Communication via Ethernet

Connecting the Ethernet interface of UFx41B to the PC

The following figure shows the connection between the PC/laptop [1] and the UFx41B [4].



The UFx41B can be connected either directly to the PC or via an Ethernet network.

The Ethernet interface X37 supports auto crossing and auto negotiation for baud rate and duplex mode. Set the IP parameters of UFF41B as described in the chapter "Addressing the fieldbus gateways and MOVIFIT® SNI".

Adjusting the engineering PC to the network (address)

To set the engineering PC appropriately for the network (addressing), proceed as follows:

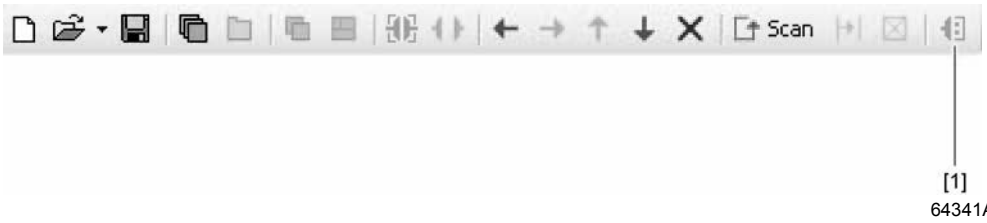
1. Under [Start] / [Settings] / [Network and Dial-up Connections], select the required PC interface.
2. Select "Properties" from the context menu.
3. Activate the "Internet protocol (TCP/IP)" check box.
4. Click on the "Properties" button.
5. For the subnet mask and standard gateway, enter the same IP addresses that are used for other Ethernet stations in this local network.
6. For the engineering PC, enter an IP address that meets the following conditions:
   - In the blocks that define the **network**, the address section of the engineering PC must correspond with the address section of the other Ethernet stations.
   - In the blocks that define the **station**, the address section of the engineering PC must be different from the address section of the other Ethernet stations.
   - Do not assign the values "0", "4", "127" and "255" in the last block.

	INFORMATION
	In the IP address of the subnet mask (e.g. 255.255.255.0), the values in the blocks have the following meaning: • "255" defines the address of the network where the stations are located. • "0" defines the address of the actual station to differentiate it from the others.

Configuring the communication channel via Ethernet

Proceed as follows to configure a communication channel for Ethernet:

1. Click on [Configure communication plugs] [1] in the toolbar.



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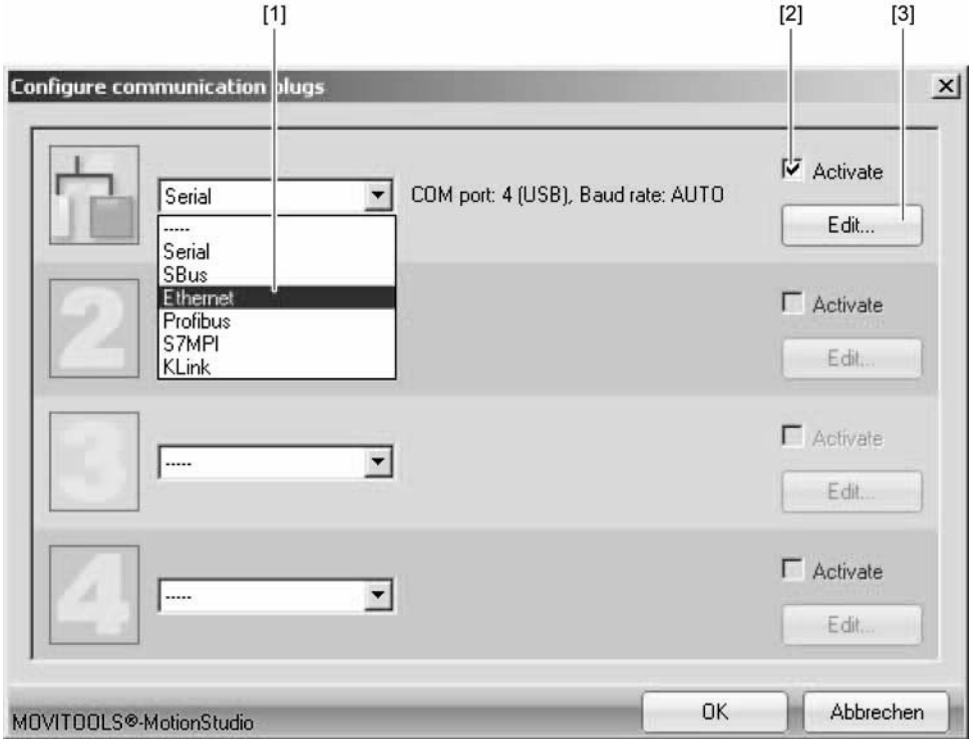
2. This opens the "Configure communication plugs" window. From the list [1], select "Ethernet" as the communication type. In the example, "Ethernet" is activated as the communication type for the first communication channel [2].



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3. Press the [Edit] button [3] in the right part of the window. This displays the settings for the "Ethernet" communication type.
4. Set up the SMLP protocol. To do so, select the "SMLP settings" tab.
5. Set the parameters. Follow the instructions described in the section "Setting parameters for SMLP".

	INFORMATION
	SMLP stands for **S**imple **M**OVI**L**INK® **P**rotocol. It is the device protocol from SEW-EURODRIVE.

Setting communication parameters for SMLP

The following table describes the communication parameters for SMLP:

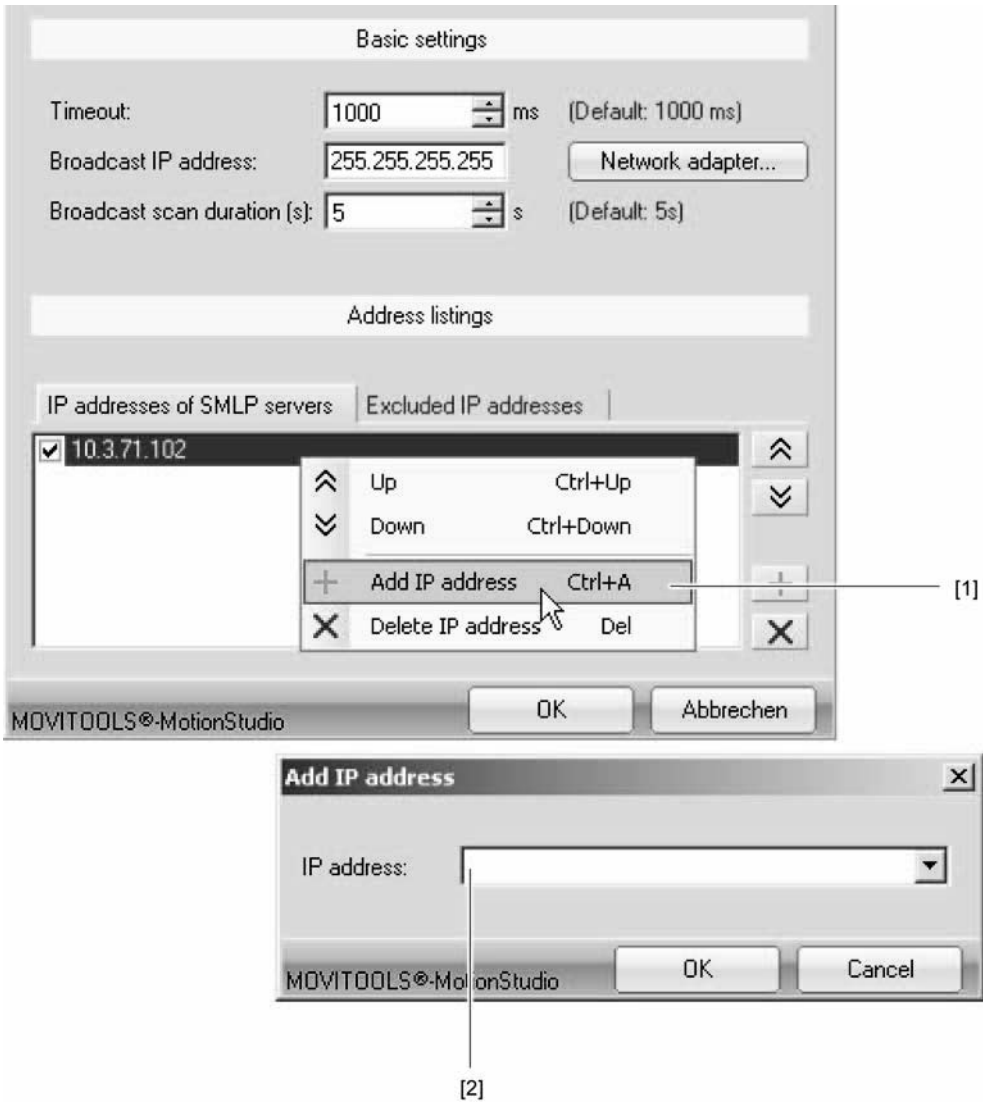
Communication parameters of the simple MOVILINK® protocol	Description	Note
Timeout	Waiting time in [ms] that the client waits for a response from the server after it has made a request.	• Default setting: 1000 ms • Increase the value as required if a delay in communication is causing malfunctions.
Broadcast IP address	IP address of the local network segment **within** which the unit scan is carried out.	In the default setting, the unit scan only detects units that are in the local network segment.
IP address of SMLP server	IP address of the SMLP server or of other units that are to be included in the unit scan but are **outside** the local network segment.	• Enter the IP address of units that are to be included in the unit scan but are **outside** the local network segment.
Excluded IP address	IP addresses of units that should **not** be included in the unit scan.	Enter the IP address of units that should **not** be included in the unit scan. These can be units that are not ready for communication (for example because they have not been started up yet).

To set up communication parameters for communicating via Ethernet, proceed as follows:

1. If necessary, change the preset communication parameters. Refer to the detailed description of the communication parameters for SMLP.

	INFORMATION
	During a unit scan, the system recognizes only units that are in the same (local) network segment as the PC that is running on MOVITOOLS® MotionStudio. • If you have units that are **OUTSIDE** the local network segment, add the IP addresses of these units to the list of SMLP servers.

2. To add an IP address, open the context menu and select [Add IP address] [1].



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3. Add IP address [2]

DIP switch S1 default IP address

With DIP switch S1, you can set a default IP address for the Ethernet connection (X37). The set IP address will be applied in the next boot process.

S1 switch setting	Meaning
Top	IP parameter: • IP address: 192.168.10.4 • Subnet mask: 255.255.255.0 • Standard gateway: 1.0.0.0
Bottom	The IP parameters defined on the memory card of the UFF41B gateway are used. The IP parameters for engineering interface X37 are entered in the file "...\System\NetConfig.cfg" in the section "Ethernet 2". You can adjust the file using a text editor (e.g. Notepad).

3.4.3 MOVIFIT® SNI via Address Editor

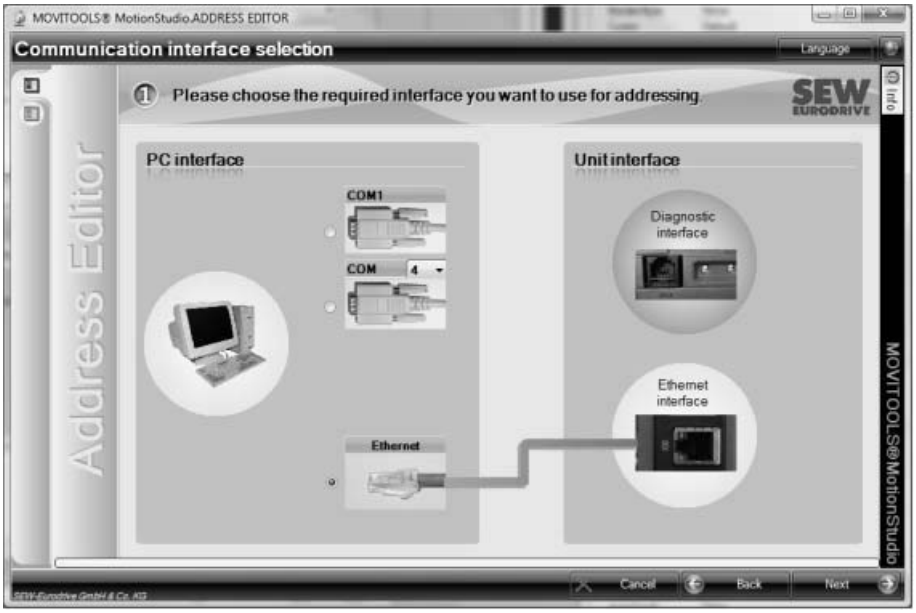
Opening the Address Editor

You can use the Address Editor once MOVITOOLS® MotionStudio has been installed.

Do the following to open the Address Editor:

1. Close MOVITOOLS® MotionStudio.
2. Open the Address Editor in the WINDOWS® start menu by following the path below:

   `Start\Program\SEW\MOVITOOLS MotionStudio\Address Editor (Address Tool)`



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Searching for Ethernet stations

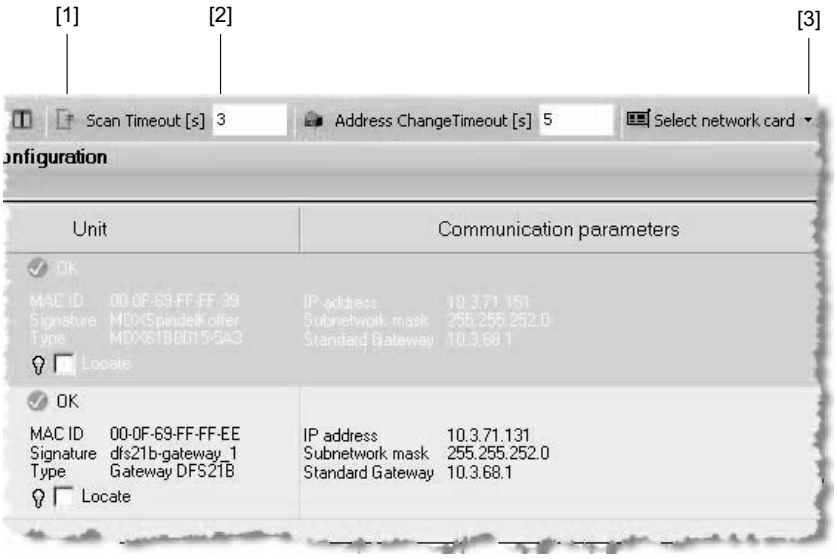
You can use the Address Editor to find Ethernet stations in a network. This is especially useful for finding recently added Ethernet stations. The Address Editor also helps you to locate the Ethernet interface of the Ethernet stations that were found.

To search for Ethernet stations and locate hardware, proceed as follows:

1. Make sure that MOVIFIT® SNI is connected with the PC via an Ethernet network. Select "Ethernet" as the interface for PC and unit. To do so, click on the corresponding option field in the lower part of the window.
2. Click [Next] to confirm your selection and proceed to the next dialog.
3. Wait for the network scan to start **automatically**. The default setting for the waiting time (scan timeout) is 3 seconds [2]

You can also start the network scan **manually** as follows:

- If you have several network cards installed in your PC, select the required card. To do so, click the "Select network card" icon [3] in the toolbar.
- Click the "Start network scan" icon [1] in the toolbar.



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[1] "Start network scan" icon

[2] "Scan timeout" edit box

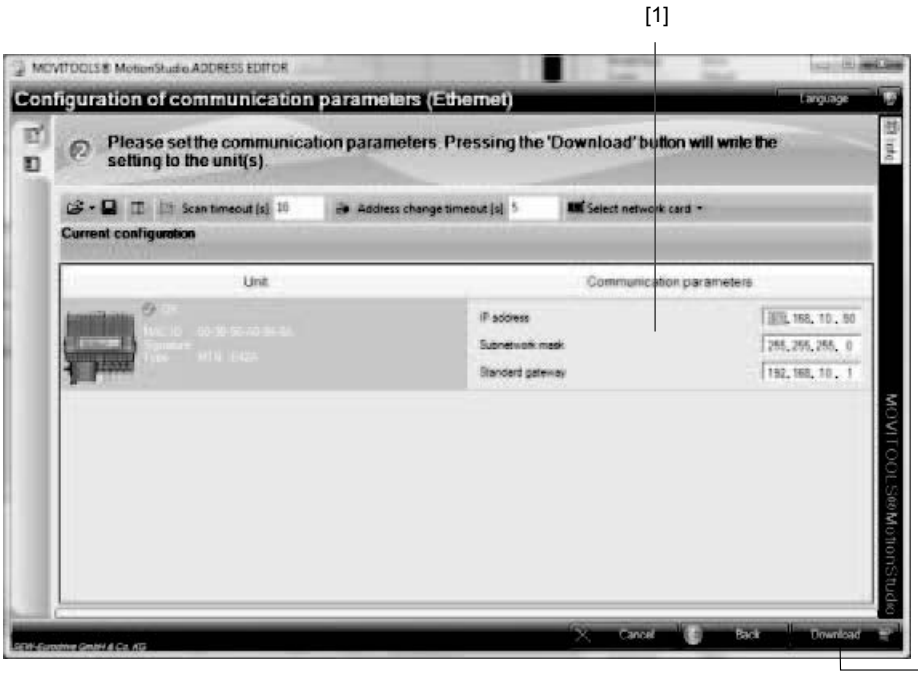
[3] "Select network card" icon

As a result, the current addresses of all Ethernet stations in the connected network will be displayed and the link/act LED of the first Ethernet interface of the Ethernet station will flash.

Adjusting located Ethernet stations to the network (address)

To set the located Ethernet stations appropriately for the network (addressing), proceed as follows:

1. Double-click on the "Communication parameters" window of the respective unit [1] to adjust the IP parameters of an Ethernet station to the network.



[1] "Communication parameters" window range

[2] "Download" button

The following fields can then be edited:

- IP address of the Ethernet station
- IP address of the subnet mask
- IP address of the standard gateway
- DHCP startup configuration (if supported by the unit)

2. Transmit the address changes to the Ethernet station. To do so, click the [Download] button [2].

3.5 Description of functions

3.5.1 Possible MOVIGEAR® functions

The MOVIGEAR® functions are used to control a drive individually. The different functions is assigned a specific number of process data words. This means the individual drives share the 64 available process data (PD).

- **1 PD drive function**

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The 1 PD drive function allows for controlling a MOVIGEAR® with fixed speeds by means of a process data word. You can configure 4 ramp sets and 6 fixed speeds by clicking the [Ramps] and [Fixed speeds] buttons.

- **2 PD drive function**

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The 2 PD drive function allows for controlling a MOVIGEAR® with a user-specific speed by means of two process data words. You can configure 4 ramp sets by clicking the [Ramps] button.

- **3 PD drive function**

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The 3 PD drive function allows for controlling a MOVIGEAR® with a user-specific speed by means of three process data words. The third process data word can be used for controlling the local inputs/outputs or for displaying the actual current. You can configure 4 ramp sets by clicking the [Ramps] button.

- **1(2) PD axis function**

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The 1(2) PD axis function allows for controlling the positioning functions integrated in MOVIGEAR®. This is achieved either by means of fixed speeds or by a user-defined speed. You can configure 4 ramp sets by clicking the [Ramps] button. The relevant positioning function is configured in the MOVIVISION® software (see MOVIGEAR® SNI system manual, chapter 11).

3.6 Process data assignment for fieldbus control

The fieldbus gateway can be integrated into a PROFIBUS controller using the GSD file "SEW_600D.GSD", or into a DeviceNet controller using the EDS file "SEW_GATEWAY_UFF.EDS".

	INFORMATION
	The latest version of the GDS and EDS files are available on the SEW homepage (http://www.sew-eurodrive.com) under the heading "Software".

Gateway 1 PD		
PO	**PI**	**Assignment**
Bit 0		SNI controller 1 timeout
Bit 1		SNI controller 2 timeout
Bit 2		SNI controller 3 timeout
Bit 3		SNI controller 4 timeout
Bit 4		SNI controller 5 timeout
Bit 5		SNI controller 6 timeout
Bit 6		Warning
Bit 7		Error
Bit 8 - 15		• Status (if bit 6 = bit 7 = FALSE) • Error number (if bit 7 = TRUE) • Warning (if bit 6 = TRUE AND bit 7 = FALSE)

MOVIFIT® SNI controller 1PD + (1PD)			
Word 1			
PO	**Assignment**	**PI**	**Assignment / comment**
Bit 0		Bit 0	Enabled
Bit 1	Enable general	Bit 1	Ready
Bit 2		Bit 2	
Bit 3		Bit 3	
Bit 4		Bit 4	
Bit 5		Bit 5	
Bit 6	Error reset	Bit 6	Warning
Bit 7		Bit 7	Error
Bit 8		Bit 8 - 15	• Status (if bit 6 = bit 7 = FALSE) • Error number (if bit 7 = TRUE) • Warning (if bit 6 = TRUE AND bit 7 = FALSE)
Bit 9			
Bit 10			
Bit 11	Mode bit 1		• Manual mode (bit 1 = 0 AND bit 2 = 0 • Automatic mode (positioning function) (Bit 1 = 1 AND bit 2 = 1)
Bit 12	Mode bit 2		
Bit 13			
Bit 14			
Bit 15			
Optional if local inputs/outputs are activated during gateway configuration.			
Word 2			
Bits 16 - 31	Local outputs (4)	Bits 16 - 31	Local inputs (16)

MOVIGEAR® SNI 1PD fixed speeds			
PO	**Assignment**	**PI**	**Assignment / comment**
Bit 0		Bit 0	Drive is rotating
Bit 1	Enable	Bit 1	Ready
Bit 2		Bit 2	
Bit 3		Bit 3	Setpoint speed reached
Bit 4	Ramp set bit 1	Bit 4	
Bit 5	Ramp set bit 2	Bit 5	
Bit 6		Bit 6	Warning
Bit 7		Bit 7	Error
Bit 8	Start	Bit 8	• DI00 (bit 6 AND BIT 7 = FALSE) • Error (bit 7 = TRUE)
Bit 9	Fixed speed bit 1	Bit 9	• DI01 (bit 6 AND BIT 7 = FALSE) • Error (bit 7 = TRUE)
Bit 10	Fixed speed bit 2	Bit 10	• DI02 (bit 6 AND BIT 7 = FALSE) • Error (bit 7 = TRUE)
Bit 11	Fixed speed bit 3	Bit 11	• DI03 (bit 6 AND BIT 7 = FALSE) • Error (bit 7 = TRUE)
Bit 12	Direction of rotation reversal	Bit 12	
Bit 13		Bit 13	
Bit 14	DO01	Bit 14	
Bit 15	DO02	Bit 15	

MOVIGEAR® SNI 1(2)PD axis function			
Word 1			
PO	**Assignment**	**PI**	**Assignment / comment**
Bit 0	Enable	Bit 0	Axis function not active
Bit 1	Jog CW	Bit 1	Ready
Bit 2	Jog CCW	Bit 2	Intermediate position CW
Bit 3	F/S range	Bit 3	In position
Bit 4	Reserved	Bit 4	Intermediate position CCW
Bit 5	Reserved	Bit 5	Error
Bit 6	Reserved	Bit 6	Reference travel required
Bit 7	Start	Bit 7	Reference travel is active
Bit 8	Position bit 1	Bit 8	• DI00 (bit 5 = FALSE) • Error number (bit 5 = TRUE)
Bit 9	Position bit 2	Bit 9	• DI01 (bit 5 = FALSE) • Error number (bit 5 = TRUE)
Bit 10	Position bit 3	Bit 10	• DI02 (bit 5 = FALSE) • Error number (bit 5 = TRUE)
Bit 11	Position bit 4	Bit 10	• DI03 (bit 5 = FALSE) • Error number (bit 5 = TRUE)
Bit 12	Position bit 5	Bit 11	• DI04 (bit 5 = FALSE) • Error number (bit 5 = TRUE)
Bit 13	Position bit 6	Bit 12	• DI05 (bit 5 = FALSE) • Error number (bit 5 = TRUE)
Bit 14	Position bit 7	Bit 14	• DI06 (bit 5 = FALSE) • Error number (bit 5 = TRUE)
Bit 15	Position bit 8	Bit 15	• DI07 (bit 5 = FALSE) • Error number (bit 5 = TRUE)
Optional if user-defined speed is activated during gateway configuration.			
Word 2			
Bits 16 - 31	Setpoint speed	Bits 16 - 31	Actual speed in 0.2 rpm

MOVIGEAR® SNI 2 PD drive function			
Word 1			
PO	**Assignment**	**PI**	**Assignment / comment**
Bit 0		Bit 0	Drive is rotating
Bit 1	Enable	Bit 1	Ready
Bit 2		Bit 2	
Bit 3		Bit 3	Setpoint speed reached
Bit 4	Ramp set bit 1	Bit 4	
Bit 5	Ramp set bit 2	Bit 5	
Bit 6		Bit 6	Warning
Bit 7		Bit 7	Error
Bit 8	Start	Bit 8	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 9		Bit 9	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 10		Bit 10	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 11		Bit 10	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 12		Bit 11	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 13		Bit 12	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 14		Bit 14	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 15		Bit 15	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Word 2			
Bits 16 - 31	Setpoint speed	Bits 16 - 31	Actual speed in 0.2 rpm

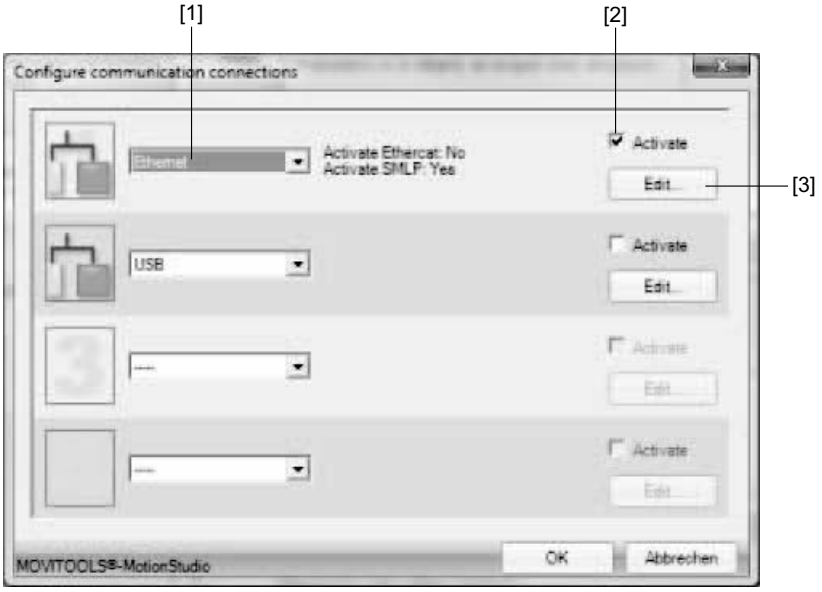
MOVIGEAR® SNI 3 PD function			
Word 1			
PO	**Assignment**	**PI**	**Assignment / comment**
Bit 0		Bit 0	Drive is rotating
Bit 1	Enable	Bit 1	Ready
Bit 2		Bit 2	
Bit 3		Bit 3	Setpoint speed reached
Bit 4	Ramp set bit 1	Bit 4	
Bit 5	Ramp set bit 2	Bit 5	
Bit 6		Bit 6	Warning
Bit 7		Bit 7	Error
Bit 8	Start	Bit 8	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 9		Bit 9	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 10		Bit 10	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 11		Bit 10	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 12		Bit 11	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 13		Bit 12	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 14		Bit 14	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Bit 15		Bit 15	• Status (bit 7 = FALSE) • Error number (bit 7 = TRUE)
Word 2			
Bits 16 - 31	Setpoint speed	Bits 16 - 31	Actual speed in 0.2 rpm
Word 3			
Bits 32 - 47	Local outputs (2)	Bits 32 - 47	Local inputs (4) / The actual current in [A] can be transmitted as option

4 Installation

4.1 Plug-in for MOVITOOLS® MotionStudio

MOVITOOLS® MotionStudio version 5.60 and higher includes the plug-in "UFx Gateway Configurator for MOVIGEAR® SNI" for parameterizing and configuring the PROFIBUS gateway for MOVIFIT® SNI.

- To start the plug-in, click the [Start] button. Next, open MOVITOOLS® MotionStudio.
- From the "Network" menu, choose the item "Communication connections". Doing so will open the window "Configure communication connections.



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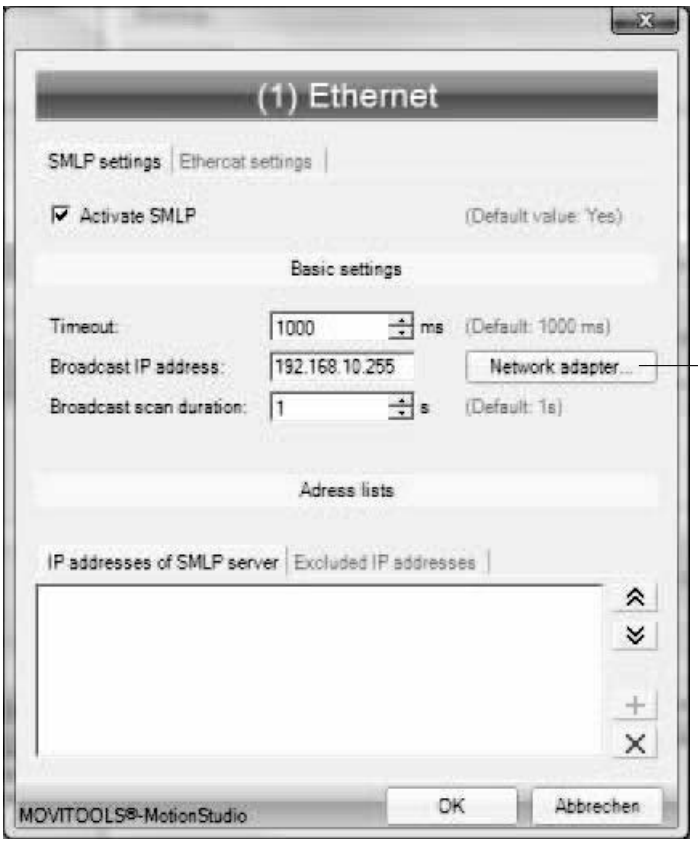
[1] "Communication type" dropwdown menu

[2] "Activate" check box

[3] [Edit] button

- From the dropdown menu [1], choose "Ethernet" as the communication type. In the example, "Ethernet" is activated as the communication type for the first communication channel [2].

Under [Edit] [3], you can set details for the Ethernet connection (see figure below).



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- Under [Network adapter] [1], you can select the active network interface. Confirm the configuration with [OK].
- Scan your network (unit scan). To do so, click the [Start network scan] icon [1] in the MOVITOOLS® MotionStudio toolbar.

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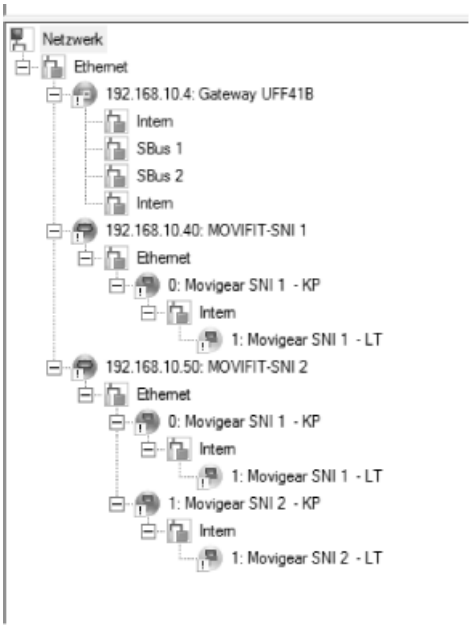
As a result, all connected MOVIFIT® SNI and lower-level MOVIGEAR® SNI in the entire network of the UFF41B fieldbus gateway should be displayed (see figure below).



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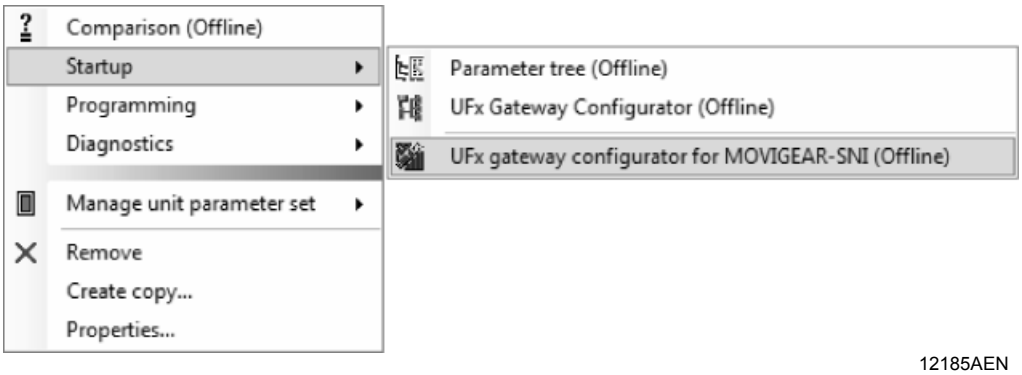
- You can open the SNI gateway configuration by choosing "UFx Gateway Configurator for MOVIGEAR® SNI" from the context menu of the UFF41B fieldbus gateway. This tool lets you carry out the entire parameterization for the fieldbus gateway and all the drives (see figure below).



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5 Startup

5.1 General information

Correct project planning and installation are the prerequisites for successful startup. For detailed project planning information, refer to the chapter "Project Planning" in this document, and to the documentation for MOVIFIT® SNI and MOVIGEAR® SNI.

Check the installation by means of the installation information in the MOVIFIT® SNI, MOVIGEAR® SNI operating instructions, the UFF41B fieldbus gateway manual, and the manual at hand (refer to the chapter "System Description").

5.2 SNI gateway configuration

General information

- Start MOVITOOLS® MotionStudio.
- From the "Startup" context menu, choose "SNI gateway configuration" The initial screen of the SNI Gateway Configurator will open (see figure below).

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The SNI gateway configuration allows for distributing the available 64 process data words to the individual MOVIFIT® SNI and MOVIGEAR® SNI units depending on the required function. The buttons have the following meaning:

- [Start Up] button: Start the SNI gateway configuration
- [Monitor] button: Process data monitor with integrated control function
- [Diagnose] button: Diagnostics of the fieldbus gateway and the configured MOVIFIT® SNI and MOVIGEAR® SNI units

Initial screen

To start SNI gateway configuration, press the [Start Up] button. The following window opens.

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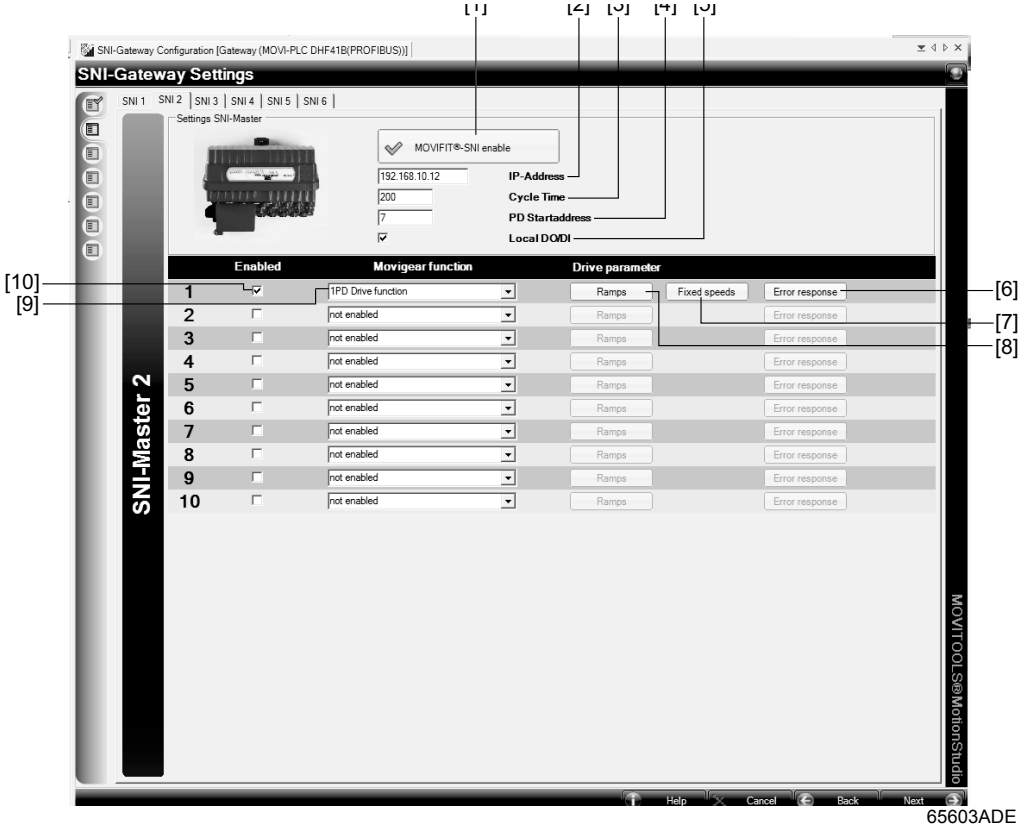
The following startup options are available:

- Upload from device (default setting):
  All data can be read when the fieldbus gateway has already been configured.
- Read from file:
  Opens a configuration saved as xml file.
- Create new:
  Use this option for initial startup.

Configuring drives

The "SNI gateway settings" window opens. The upper part of the window displays the parameters for each of the up to 6 MOVIFIT® SNI.

In the lower part of the window, you can set the drive parameters and functions of lower-level MOVIGEAR® SNI.



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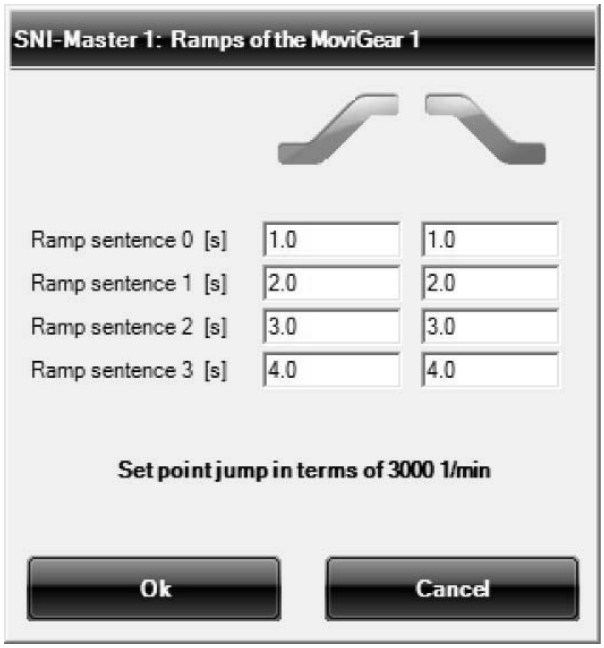
[1]	**[MOVIFIT® SNI enable] button**	To enable MOVIFIT® SNI (tab SNI 1 - SNI 6)
[2]	**"IP address" edit box**	Check/enter the correct IP address of MOVIFIT® SNI
[3]	**"Cycle time" edit box**	Check/enter the correct cycle time between fieldbus gateway and MOVIFIT® SNI (at least 5 ms per master)
[4]	**"PD start address" edit box**	Check/enter the correct PD start address. PD start address for the first MOVIFIT® SNI: 2.
[5]	**"Local DO/DI" check box**	To activate the local binary outputs and inputs (DO/DI).
[6]	**[Ramps] button**	To set the ramp times for MOVIGEAR® SNI (see the section "Setting ramp times")
[7]	**[Fixed speeds] button**	To set fixed speeds for MOVIGEAR® SNI (see the section "Setting fixed speeds")
[8]	**[Error response] button**	To activate the error response of MOVIGEAR® SNI (see the section "Setting the error response")
[9]	**"Enabled" check box**	To enable the set MOVIGEAR® function
[10]	**"MOVIGEAR® function" dropdown menu**	To set the required MOVIGEAR® function (see the chapter "Description of functions").

Setting ramp sets

To set the ramp sets of MOVIGEAR® SNI, click the [Ramp] button. The following window opens:



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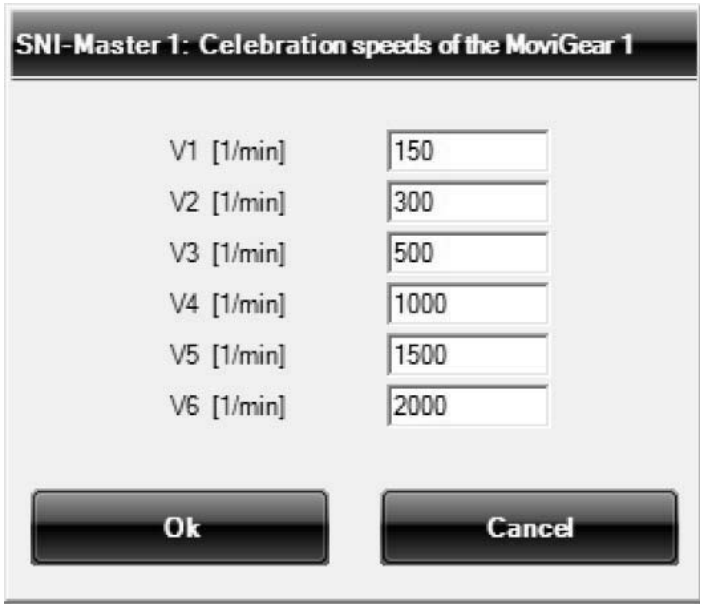
You can make the following settings using the context menu:

- Copy set ramp sets to the clipboard
- Paste existing ramp sets from the clipboard
- Apply the configured ramp set to all MOVIGEAR® SNI

Confirm with [OK].

Setting fixed speeds

To set fixed speeds for MOVIGEAR® SNI, click the [Fixed speeds] button. The following window opens:



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You can make the following settings using the context menu:

- Copy set values to the clipboard
- Paste existing values from the clipboard
- Apply set values to all MOVIGEAR® SNI

Confirm with [OK].

Setting the error response

To set the error response of MOVIGEAR® SNI, click the [Error response] button. The following window opens:

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You can choose one of the following error responses:

- MOVIFIT® SNI ignores drive faults of MOVIGEAR®
- MOVIGEAR® drive ignores device errors of MOVIFIT® SNI

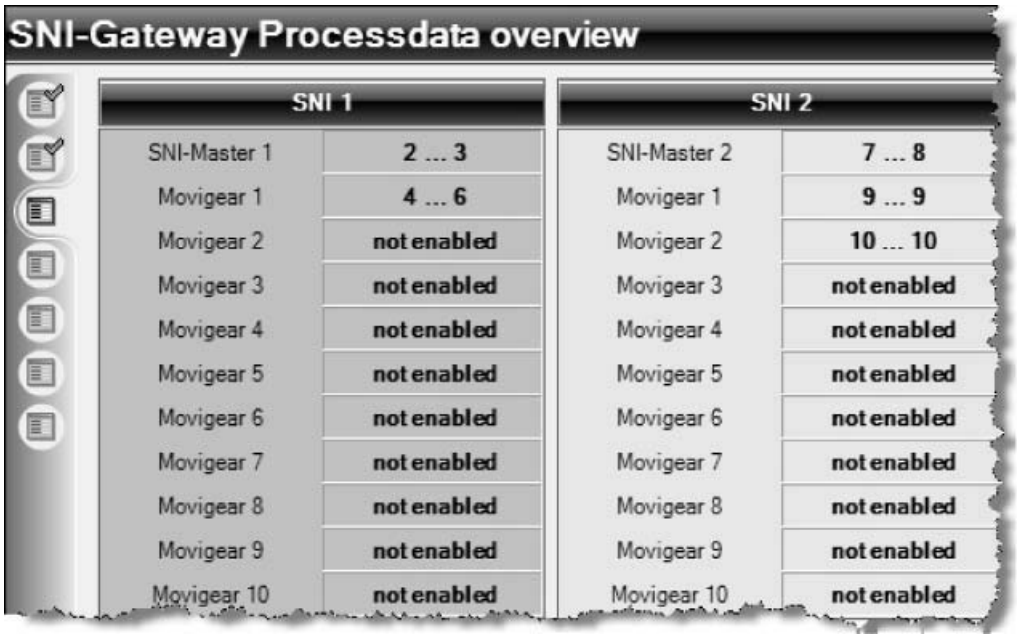
The context menu provides the following setting option:

- Apply the set error response to all MOVIGEAR® drives

Confirm with [OK]. The "SNI gateway settings" window opens again. This means the configuration has been completed successfully. Click [Next] to continue.

Overview of process data

The "SNI gateway process data overview" window opens (see following figure).



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This window provides an overview of the configuration. The PD start addresses of the relevant drives are displayed. 1 PD is always assigned to the fieldbus gateway.

Click [Next] to download the configuration.

Example

3 MOVIFIT® SNI with a total of 24 MOVIGEAR® SNI drives are controlled.

- 20 drives are operated with variable speed. The initiators of 4 of these drives are read using the GIO12A application option (see MOVGEAR® SNI system manual).
- 4 drives are operated with fixed speeds.

This will result in the following process data overview:

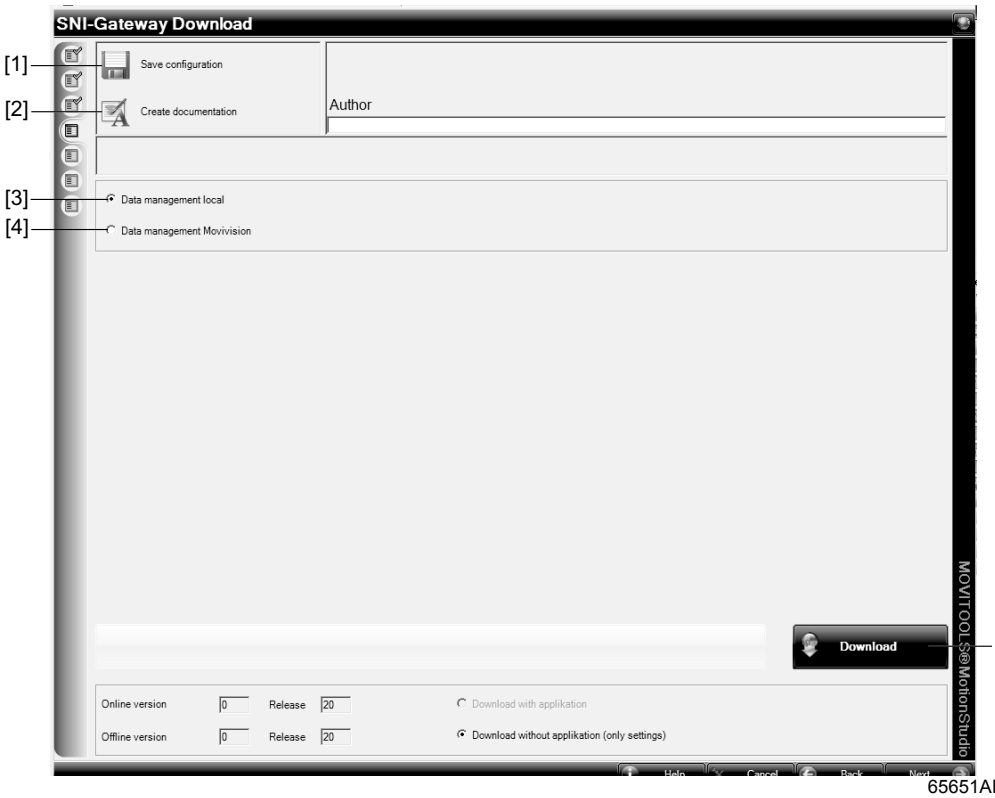
- 1 PD for the fieldbus gateway
- 3 × 1 PD for MOVIFIT® SNI (without local DO/DI)
- 16 × 2 PD for MOVIGEAR® SNI with variable speed
- 4 × 3 PD for MOVIGEAR® SNI with variable speed and IOs
- 4 × 1 PD for MOVIGEAR® SNI with fixed speed

Result:

One fieldbus gateway is sufficient. The number of process data words used is 52.

Downloading the configuration

The "SNI gateway download" window opens.



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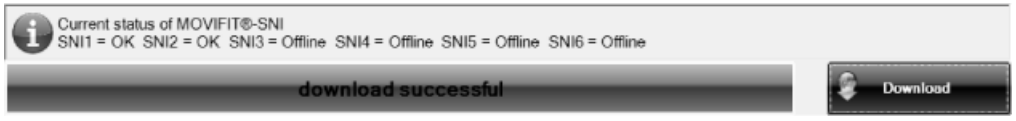
[1]	**"Save configuration" option**	The current configuration is saved as xml file.
[2]	**"Create documentation" option**	The current configuration is documented and saved as pdf file.
[3]	**"Data management local" check box (default setting)**	All configured data is saved to the SD card of the fieldbus gateway (except for MOVIGEAR® function "1(2) PD axis function").
[4]	**"Data management Movivision" check box**	MOVIGEAR® function "1(2) PD axis function" must be parameterized with MOVIVISION® (see "MOVIGEAR® SNI" system manual, chapter "Parameter management").
[5]	**[Download] button**	To download the configuration data.

The following message appears once the configuration has been downloaded successfully:



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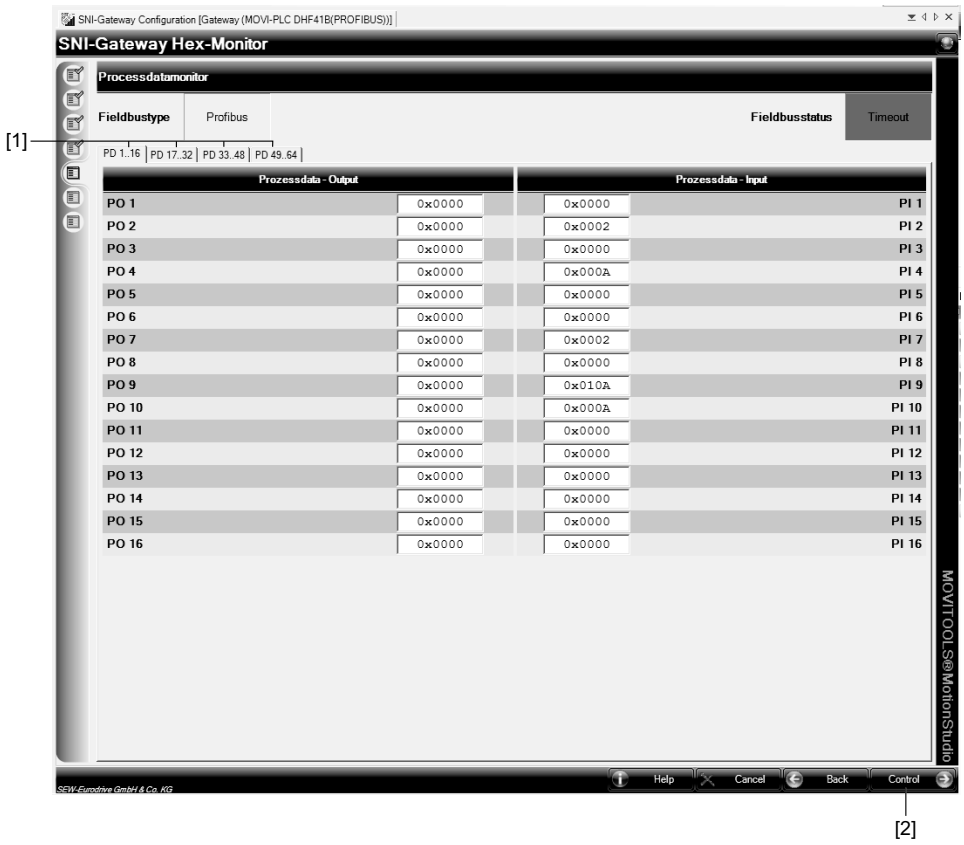
Click [Next] to open the process data monitor (see the chapter "Process data monitor").

5.3 Process data monitor with integrated control function

The monitor and control function allows for controlling every drive in the driveline from the engineering PC and for diagnosing the process data in both directions. The following figure shows diagnostics of the process input and output data.



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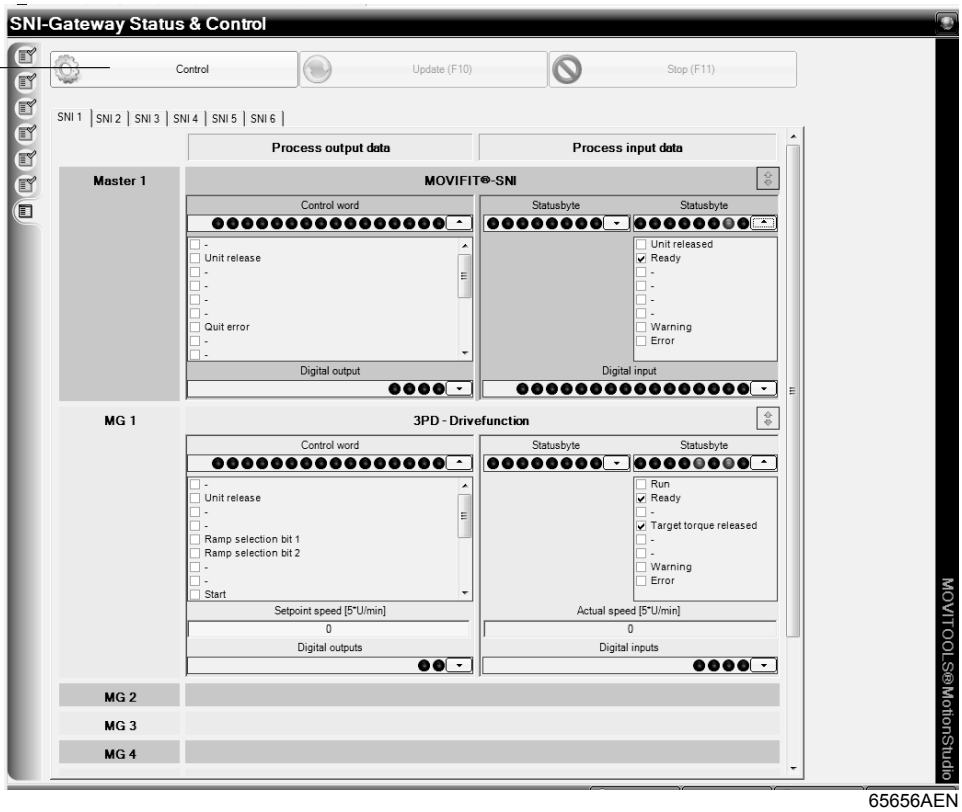
The process input and output data transmitted via fieldbus are displayed on 4 tabs [1] with 16 process data words each analogical to the process data description.

Clicking on the [Control status] button [2] displays the individual process input and output data for every unit (MOVIFIT® SNI1 - 6, MOVIGEAR® SNI1 - x) according to the configuration (see the below figure for an example).

The following figure shows the configuration in status mode.



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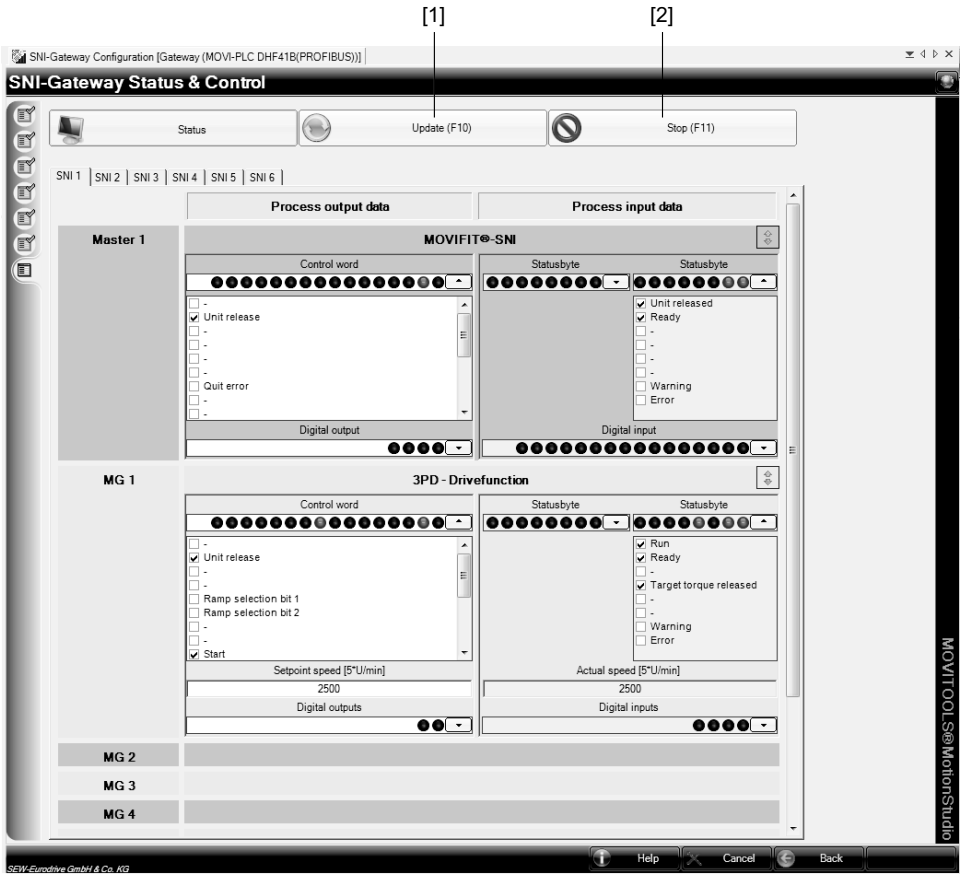
You can toggle between status and control mode by clicking the [Control] button [1] (see figure below).

The following figure shows the configuration in control mode.



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In control mode, you can control the individual drives from an engineering PC according to the process data description. Once you return to status mode, the fieldbus data will be activated immediately.

Clicking the [Update] button [1] (or pressing the <F10> key) lets you transmit the current setting of the process output data to the fieldbus gateway and the relevant MOVIFIT® SNI (SNI 1 - SNI 6). Process input data are status displays and are transmitted cyclically and updated also in control mode.

Clicking the [Stop] button [2] (or pressing the <F11> key) lets you reset the control commands.

5.4 Diagnostics

You can have the status and error states of individual drives displayed in the event of a malfunction. You open the diagnostic monitor by clicking the [Diagnostics] button on the initial screen of the SNI gateway (see the following figure for an example).

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The "Overview" tab provides you with the following information:

- Settings of the fieldbus gateway (upper part of the tab)
- Overview of connected MOVIFIT® SNI units (lower part of the tab)

The "SNI 1 - SNI 6" tab (see figure below) displays the

- Settings of the relevant MOVIFIT® SNI unit (SNI 1 - SNI 6) in the upper part of the tab
- Settings of MOVIGEAR® SNI units connected to MOVIFIT® SNI in the lower part of the tab

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