

User Guide

smartLink DTM





Version: EN-052023-1.10 © Softing Industrial Automation GmbH

Disclaimer of liability

The information contained in these instructions corresponds to the technical status at the time of printing of it and is passed on with the best of our knowledge. Softing does not warrant that this document is error free. The information in these instructions is in no event a basis for warranty claims or contractual agreements concerning the described products, and may especially not be deemed as warranty concerning the quality and durability pursuant to Sec. 443 German Civil Code. We reserve the right to make any alterations or improvements to these instructions without prior notice. The actual design of products may deviate from the information contained in the instructions if technical alterations and product improvements so require.

Trademarks

FOUNDATION[™] and HART[®] are registered marks of the FieldComm Group of Austin, Texas, USA.

OpenSource

To comply with international software licensing terms, we offer the source files of open source software used in our products. For details see https://opensource.softing.com/

If you are interested in our source modifications and sources used, please contact: info@softing.com

Softing Industrial Automation GmbH

Richard-Reitzner-Allee 6 85540 Haar / Germany https://industrial.softing.com

+ 49 89 4 56 56-340

info.automation@softing.com support.automation@softing.com

https://industrial.softing.com/support/support-form

Scan the QR code to find the latest documentation on the product web page under Downloads.



Table of Contents

Chapter	1	About this guide	5
	1.1	Read me first	5
	1.2	Target audience	5
	1.3	Typographic conventions	5
	1.4	Document history	6
	1.5	Related documentation and videos	6
	1.6	Document feedback	6
Chapter	2	About smartLink DTM	7
	2.1	Intended use	7
	2.2	Software and functionality	7
	2.3	What is a Field Device Tool	8
	2.4	What is a Device Type Manager	8
	2.5	What is a frame application	10
	2.6	HART	10
Chapter	3	Installing smartLink DTM	.1
Chapter	4	smartLink DTM user interface explained1	.2
Chapter	5	Using smartLink DTM 1	.4
	5.1	Starting FDT frame application	14
	5.2	Adding a smartLink HW-DP or smartLink SW-HT HART	16
	5.3	Setting connection parameters	17
	5.4	Connecting a smartLink node	18
	5.5	Setting the channel count	19
	5.6	Assigning a channel	21
	5.6.1	smartLink HW-DP HART	21
	5.6.2	smartLink SW-HT HART	24
	5.7	Connecting a HART field device	27
	5.8	Reading connected smartLink node	28
	5.9	Additional user interface menus	32
	5.9.1	About smartLink DTM	32
	5.9.2	Documentation of access parameters	33
	5.9.3	Troubleshooting	34
	5.9.4	Audit trail	35
Chapter	6	Troubleshooting	37

This page is intentionally left blank.

1 About this guide

1.1 Read me first

Please read this guide carefully before using the device to ensure safe and proper use. Softing does not assume any liability for damages due to improper installation or operation of this product.

This document is not warranted to be error-free. The information contained in this document is subject to change without prior notice. To obtain the most current version of this guide, visit the <u>product website</u>.

1.2 Target audience

This guide is intended for experienced operation personnel and network specialists responsible for configuring and maintaining field devices in process automation networks. Before installing and operating the smartLink DTM make sure that you have read and fully understood the safety requirements and working instructions in this guide.

1.3 Typographic conventions

The following conventions are used throughout Softing customer documentation:

Keys, buttons, menu items, commands and other elements involving user interaction are set in bold font and menu sequences are separated by an arrow	Open Start → Control Panel → Programs
Buttons from the user interface are enclosed in brackets and set to bold typeface	Press [Start] to start the application
Coding samples, file extracts and screen output is set in Courier font type	MaxDlsapAddressSupported=23
Filenames and directories are written in italic	Device description files are located in C: \ <application name>\delivery\software\Device Description files</application



CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in damage or injury.



Note

This symbol is used to call attention to notable information that should be followed during installation, use, or servicing of this device.



Hint

This symbol is used when providing you with helpful user hints.

1.4 Document history

Document version	Changes since last version
1.00	first version
1.10	DTM description for smartLink SW-HT added

1.5 Related documentation and videos

See the following links for additional and related product information:

- smartLink HW-DP User Guide
- smartLink SW-HT User Guide

1.6 Document feedback

We would like to encourage you to provide feedback and comments to help us improve the documentation. You can write your comments and suggestions to the PDF file using the editing tool in Adobe Reader and email your feedback to support.automation@softing.com.

If you prefer to write your feedback directly as an email, please include the following information with your comments:

- document name
- document version (as shown on cover page)
- page number

2 About smartLink DTM

2.1 Intended use

The smartLink DTM tool is used to configure, diagnose and maintain HART field devices that are connected to smartLink via Remote I/Os (RIOs). This chapter describes the application scenarios and functionality of this tool including the relevant Field Device Tool (FDT) and HART technologies. Any other use is deemed non-intended use.

2.2 Software and functionality

smartLink DTM takes over the entire protocol and device-specific management for communicating with HART devices via the corresponding Softing smartLink.



Note

To grant smartLink unrestricted communication with HART devices, you must first activate the optionally available licenses for smartLink and update its firmware to at least version 1.10. For more information see the smartLink HW-DP and smartLink SW-HT user guides.

Using the smartLink DTM you can parameterize and diagnose any number of HART devices. Please note that suitable DeviceDTMs are required to parameterize the devices. These DeviceDTMs are typically provided by the device manufacturer.

The smartLink DTM offers the following functionality:

- Configuration of access parameters for individual smartLink devices.
- Assignment of channels for the HART devices connected to the smartLink.
- Access to HART devices via smartLink.
- Selection of the Remote I/O module channels connecting to HART devices.
- Internationalization (UTF8) and localization for English and German.
- Control of access to critical functions according to the FDT user role concept.
- Logging of audit trail events (must be supported by the FDT frame application).
- Documentation of the smartLink access parameters.

2.3 What is a Field Device Tool

The Field Device Tool (FDT) is a standard communication protocol used in industrial automation to communicate with field devices. FDT simplifies and saves time in the commissioning and maintenance of increasingly complex installations which consist of a growing number of field devices from different manufacturers. FDT is a standardized software interface for the configuration, parameterization and handling of intelligent field devices, regardless of the manufacturer and communication protocol. FDT is based on the existing fieldbus technologies and extends them by a fieldbus-independent software interface between the devices and the engineering system. The most diverse automation components from various manufacturers can thus be configured, parameterized and managed using only one engineering system, independently of the protocols or fieldbuses over which the devices communicate. To make the devices easy to commission and handle, FDT defines a wide variety of graphical options for describing and operating the devices. FDT offers different user roles and defines specific access rights, e.g. for maintenance, commissioning, monitoring, etc.

2.4 What is a Device Type Manager

The central component of a Field Device Tool (FDT) is the Device Type Manager. Known as DTM, this software component is supplied by a device manufacturer together with the device. It is somewhat like a software driver for a specific printer. It contains all device-specific data, functions and graphical controls. DTMs are used in industrial automation and process control systems to manage communication and configuration of field devices such as sensors, actuators, controllers, and other industrial devices. These devices typically communicate using protocols such as HART (Highway Addressable Remote Transducer), FOUNDATION Fieldbus, PROFIBUS (Process Field Bus), or other industrial communication protocols. A Device Type Manager provides the interface between the field devices and the automation system, allowing for configuration, monitoring, and control of these devices.

There are three types of DTMs:

DeviceDTM

The DeviceDTM is a DTM that represents a specific field device. It contains all the information on configuration, diagnostics and documentation that is distinctive for the device. To make all the desired functions of the device available in the engineering system, the DTM uses the communication services of a CommDTM or GatewayDTM. A DeviceDTM is often simply called a DTM. This should be avoided because the term DTM is a generic term for all kinds of DTMs.

CommDTM

The CommDTM (communication DTM) is a DTM that represents a communication device, such as a PC interface board, which acts as a master on a fieldbus network. The CommDTM encapsulates all communication-specific aspects, and manages and configures the communication module (e.g. PC interface board).

To configure and test a device, the relevant DeviceDTM transmits communication requests as XML documents via a COM interface to a communication channel of the CommDTM. A communication channel represents the fieldbus access within a communication device. The communication device may provide one or more communication channels.

GatewayDTM

A GatewayDTM is a DTM that represents a physical gateway between two fieldbus segments. The fieldbus segments typically differ in the protocol (e.g. HART/PROFIBUS) and/or the physical properties. A GatewayDTM contains functionality that is specific to the bridged communication protocols and to the manufacturer-dependent gateway properties.

To configure and test a field device on the target segment of the gateway (the segment behind a gateway from the point of view of the fieldbus access), the relevant DeviceDTM transmits communication requests as XML documents via a COM interface to a communication channel of the GatewayDTM. A communication channel represents a path between fieldbus segments within a physical gateway.

The gateway may provide one or more communication channels. The GatewayDTM transforms the communication requests that are specific to the communication protocol used by the device into communication requests according to the fieldbus access. It then passes them on to the CommDTM. Communication across segment boundaries by using a GatewayDTM is referred to as *nested communication*.



Fieldbus-independent FDT concept

2.5 What is a frame application

An FDT (Field Device Tool) frame application is a software that provides a platform or framework for configuring, managing, diagnosing, and monitoring field devices in industrial automation and control systems. It allows you to import device information by accessing the relevant DTMs provided by the device manufacturer. An FDT frame application is the only application within the FDT concept which is implemented as an executable. It is application is responsible for loading and unloading the DTMs, managing and saving data in a project database, managing a device catalog, generating a project documentation, supervising user and access rights, and displaying all user interfaces of the DTMs.

There are a number of FDT frame applications on the market each offering a different user interface structure and visualization. For the sake of consistency, this user guide describes the integration of the smartLink DTM and connection the Softing smartLink instances using the frame application **PACTware**[™].

2.6 HART

HART (Highway Addressable Remote Transducer) is a two-way communication protocol designed for field devices in process automation using a 4-20mA analog signal. HART provides digital communication capabilities over the analog current loop by superimposing digital signals on top of the analog signal. It can be used to parameterise, diagnose and poll process values.

The HART protocol implements OSI layers 1 (physical layer), 2 (data link layer) and 7 (application layer). The HART Physical Layer defines the electrical connection between HART devices, typically on twisted copper cables which transmit the 4-20mA analog signal of the device. For transmitting the HART bit stream a high frequency signal is superimposed on the analog signal is using the Continuous Phase Frequency Shift Keying (CPFSK) principle where the bit values of 0 and 1 are represented by different frequencies without causing phase jumps during frequency switching. The data transmission rate is 1200 bps. To synchronize transmitter and receiver preambles are added to the Physical Layer.

The Data Link Layer deals mostly with the structure of the data packets, device addressing, error correction and bus access control. Insofar, HART is a binary byte-oriented master-slave protocol on which bus access is organized by the token-passing method. Device addressing is done either by using a polling address that can be individually assigned to a slave (field device) or by a specific bit address which is a unique identifier permanently set by the device manufacturer. With HART you can have to masters.

The primary master is normally the control system master while the secondary master is used only when required, typically by a temporarily connected hand-held communicator such as the smartLink device. The token-passing protocol communicates between both masters to control the bus access. During normal operation the slaves do not have an active role. They may, however, be used in what is called burst mode communication, a method where the slaves are instructed to continuous burst (broadcast) messages, thereby taking part in the token-passing communication.

The Application Layer handles through a serious of HART commands the generation (master) and processing (slave) of data packets. The HART commands are divided into three categories: The *Universal Commands* which must be supported by all slaves. The *Common Practice Commands* which even optional device manufacturers are encouraged to prioritize them over Device-Specific Commands. The *Device-Specific Commands* which include only device functions implemented by specific manufacturers.

3 Installing smartLink DTM

Before you can work with your smartLink you have to install the smartLink DTM. Download the smartLink DTM application from the <u>Download Center</u> or the smartLink HW-DP <u>product page</u>.

- 1. Download the latest version of the smartLink DTM.
- 2. Double-click the **setup.exe** file to start the installation.
- 3. Select the installation language.
- 4. Follow the install wizard instructions.

4 smartLink DTM user interface explained

The user interface of Softing smartLink DTM follows the basic design according to the FDT style guide. The Chapter gives you a general overview of the smartLink DTM user interface, its windows and functions in the FDT frame application PACTware.



Note

For a details on how to connect and configure Softing smartLink HW-DP and smartLink SW-HT nodes and parameterizing HART RIOs see the next chapter <u>Using smartLink</u> <u>DTM</u>⁽¹⁴⁾.

💿 smartLii	nk HW-DP	HART # Parameter		4 ⊳	×
	Device: Product: Vendor:	smartLink HW-DP HART smartLink DTM Softing Industrial Automa	ation GmbH	softing	Information area
Network S	ettings		Login Credentia	ıls	1
IP address HART IP por	/	192.168.0.11 5094	User name Password	administrator	
					Application area
			OK	Cancel Apply	
			ŬŔ.	Cancel Apply	Action area
	1				Status area
1 2 3	4 5 6	Text			

- The **informations area** shows an image of a smartLink, the corporate logo and the names of the product, the device and the vendor.
- The **application area** shows the operational elements for the tasks that are performed in a user interface.
- The **action area** contains buttons to execute the main actions.
- The status area shows general status information about smartLink HART.

The optional navigation area described in the FDT style guide is not included in the smartLink DTM user interface.

Status symbols

Field 1 of the status area displays the following DTM status symbols:

- ↓ The smartLink device is disconnected.
- A connection has been established to smartLink and it is inactive. This state occurs only briefly when smartLink DTM is connected and disconnected. When smartLink DTM is connected it changes to an active connection right away. This state does not occur during normal operation.

- A connection has been established to smartLink and it is active.
- A connection to the smartLink changes from inactive to active.
- A connection to the smartLink changes from active to inactive.
- A smartLink connection has been disrupted.

Field 2 of the status area shows the following communication states:

smartLink is currently not communicating.

smartLink is currently communicating.

Field 3 typically shows the processing state of the instance dataset of the device dataset while field 4 shows if the instance dataset has been modified compare with the device dataset. Both fields are always empty, because smartLink HART does not have any device parameters.

Field 5 area shows the input state as follows:

- The current input values are unchanged and valid.
- The current input values have been modified.
- The current input values are invalid.

Field 6 is always empty. It normally shows if the user interface operates in block mode or in direct mode. The smartLink DTM user interface always runs in block mode and this filed has to be empty according to the FDT style guide.

5 Using smartLink DTM

In this chapter you will learn how to work with smartLink DTM and read DeviceDTMs in an FDT frame application.

5.1 Starting FDT frame application

Like any DTM, smartLink DTM must be loaded into an FDT frame application. The services provided by smartLink DTM for communication with HART devices can be used to read DeviceDTMs running in the same FDT frame application.

The FDT frame applications of different manufacturers prioritize different tasks and objectives. Therefore, the design of the user interface, the functionality provided and the operation may also vary significantly from frame application to frame application. The following sections describes the **PACTware™** frame application. If you are using a different frame application, consult the related user manual.

Select Windows Start → PACTware 4.1 → PACTware 4.1 to start the FDT frame application (in this case PACTware).

With many frame applications you need to log on with your user name and password after initial startup. You may also have to create a new project before you can start adding DTMs.



Note

The local DTM device catalog is typically updated automatically. If however for whatever reason this is not done automatically you will need to update the device catalog manually.

2. Select **Device catalog** → **Update device catalog** to update the local device DTM to include the smartLink DTM (provided this is <u>not</u> done automatically).

The screenshot below shows the PACTware user interface immediately after startup displaying the device catalog. Remember that you have to update the device catalog after installing new DTMs to inform the frame application of the newly installed DTMs and the devices they support. This process is specific for the frame application you are using. Refer to the user manual of the frame application for the relevant information. If you are using PACTware, click **[Update device catalog]** in the device catalog.

						Devices of	ala a			
oject	Address 0 36 Device type	Status	Timestamn status				l Devices	All Devices		· · · ·
) HOST PC			·				ABB ABB Automation Products GmbH ABB Instrumentation spa CodeWrights GmbH Hiprom Technologies (CS GmbH PR electronics R. Stahl Schattgeräte GmbH Rockwell Automation Softing Industrial Automation Gr Spectrum Controls	Device Pr44000.F54000 (TRIC-WIRL) HART Ø F44000.F54000 (TRIC-WIRL) PA 0x450C Pr545000(CPA-2FMAG-XB) HART Ø F146000(CPA-3E/MAG-XB) PA 30 0x6691 Pr545000(CPA-3E/MAG-XB) PA 30 0x670 Ø F146000(CPA-3E/MAG-XB) PA 30 0x670 Pr64000(CPA-3E/MAG-XB) PA 30 0x670 Ø F146000(CPA-3E/MAG-XB) PA 30 0x670 Pr64000(CPA-3E/MAG-XB) PA 30 0x670 Ø F146000(CPA-3E/MAG-XB) PA 30 0x670 Pr64000(CPA-3E/MAG-XB) PA 30 0x670 Ø F146000(CPA-3E/MAG-XB) PA 30 0x670 Pr64000(CPA-3E/MAG-XB) PA 30 0x670 Ø F146000(CPA-3E/MAG-XB) PA 30 0x670 Pr64000(CPA-3E/MAG-XB) PA 30 0x670 Ø F146000(CPA-3E/MAG-XB) PA 30 0x6710 Pr6400(CPA-3E/MAG-XB) PA 30 0x670 Ø F14600(CPA-3E/MAG-XB) PA 30 0x670 Endop 71/NS Ø L0800 F1/NSE L0800 F1/NSE	Protocol HART PROFIBUS_DPV1 HART PROFIBUS_DPV1 HART PROFIBUS_DPV1 HART HART HART HART HS Ethernet/IP (CI FF HS - FF H1	Vendor ABB ABB ABB ABB ABB ICS GmbH CodeWrig Hiprom T ABB
				Error mor Serial	itor Date	÷.	VEGA Grieshaber KG	MINITRAC 31 FART MINITRAC 31 HART SL MINITRAC 31 HART SL MINITRAC 31 Profibus MINITRAC 32 FF MINITRAC 32 FF MINITRAC 32 HART SL MINITRAC 32 HART SL MINITRAC 32 HART SL MINITRAC 32 MART SL	FF H1; VVO Protoc HART; VVO Protoc PROFIBUS DP/V1; FF H1; VVO Protoc HART; VVO Protoc HART; VVO Protoc PROFIBUS DP/V1; FF H1 HART	VEGA Grie Softing Ir Softing Ir
								mobilink PA mobilink Power FF mobilink Power HART mobilink Power PA Modbus Module Serial PLICSCOM PLICSCOM UICSMOBILE 00 pages	PROFIBUS DP/V1 FF H1 HART PROFIBUS DP/V1 WO USB Protocol WO BT Protocol WO Protocol; WO	Softing In Softing In Softing In Softing In VEGA Gri VEGA Gri VEGA Gri
						< Vendor Show	Sroup Type Protocol	PLICSMUBILE 80 series PLICSMUBILE 161 PLICSRADIO C62 <	WO BI Protocol; WO WO Protocol; WO WO Protocol - wi	VEGA Gr

On the left side of the PACTware window you see the project view, which currently contains only the root node of the project. Devices are typically represented in a hierarchical tree structure in the project view of a frame application. The common root of all devices is often a node that represents the overall project instead of a device. The communication devices are shown as child nodes of this root. The field devices are represented as the leaves of the tree. There may be gateways connected between a communication devices.

On the right side of the PACTware window you see the devices that are supported by the installed DTMs. In screenshot above you find various manufacturer listed in the device catalog.

In the next section you will learn how to add a communication DTM for a smartLink to the project.

5.2 Adding a smartLink HW-DP or smartLink SW-HT HART

- 1. Right-click the **HOST PC** bar in the project view to open the context menu.
- 2. Select Add device from the menu.



3. Select a smartLink (HW-DP or SW-HT) from the All Devices list.

iex tog Addresr () 26 Device type Status Timestamp status HDST PC Device for Device for	ce tag IOST PC	Address 🚺 嶺 Device t	ype Status Timestamp :	status	
HOST PC I Device for All Devices I Device for I Device for I Device fo	IOST PC				
Device for All Devices Image: State State All Devices Image: State Device State Image: State Device State <t< th=""><th></th><th></th><th></th><th></th><th></th></t<>					
Device for All Devices ■ ● Device ● Device Device					
Device for All Devices Device for All Devices Device for Device for Device for Protocol Device for Vedor flatter Device for Vedor flatter Device for Vedor flatter Device for Vedor flatter Vedor (Brugs Type Protocol VEGA Grahaber KG Vedor (Brugs Type Protocol VEGA MonDil IS Carial Vedor (Grans Device for MonDil IS Carial MONDILS Carial MONDILS Carial					
Device for All Devices ■ ▲ Devices ■ Protocol ■ Protocol ■ Protocol ■ Protocol ■ ■					
Image: Second					
Device for Device D					
Device for Device D					
Denice for All Denices Denice					
Device for Device De					
Device for All Devices ■ Oncire S Device ^ // Protocol Mitting for the softward of the softward					
Device for Device De					
Device for All Devices					
Consider and the set of the					
All Devices All Devices Wendor Device Protocol Wendor Device Protocol Wendor moblink FF FFH1 Softrag Industrial Automatical		Device for			
Device Protocol Windor • Diver mobilinik F FFH1 Softing Industrial Au • mobilinik HATT HATT Softing Industrial Au • mobilinik HATT HATT Softing Industrial Au • mobilinik Power FA PSPFBUS DPV11 Softing Industrial Au • mobilinik Power FA PSPFBUS DPV11 Softing Industrial Au • mobilinik Power FA PSPFBUS DPV11 Softing Industrial Au • mobilinik Power FA PSPFBUS DPV11 Softing Industrial Au • mobilinik Power FA PSPFBUS DPV11 Softing Industrial Au • mobilinik Power FA PSPFBUS DPV11 Softing Industrial Au • mobilinik Power FA PSPFBUS DPV11 Softing Industrial Au • mobilinik Power FA PSPFBUS DPV11 Softing Industrial Au • mobilinik Power FA PSPFBUS DPV11 Softing Industrial Au • stratecting VSVF1 HAMT HAATT Softing Industrial Au • Strate Substrate KW VEGA Grahaber KG VEGA Grahaber KG • VEGA Grahaber KG • VEGA Grahaber KG VEGA Grahaber KG • Strate Substrate Au • VEGA Graha			All Devices		
Dover D		Device	Device	 Protocol 	Vendor
Vender (Group) Type Protocol VEGA Grandbarder KA		- 🕆 Driver	mobiLink FF	FF H1	Softing Industrial Aut
Implicitive XA PROFILIS DOV1 Softing Industrial Au mobilitive Rover FF FF H1 Softing Industrial Au mobilitive Rover FA Implicitive Rover FA FF H1 Softing Industrial Au mobilitive Rover FA Softing Industrial Au mobilitive Rover FA FROFILIS DOV1 Softing Industrial Au mobilitive Rover FA Implicitive Rover FA FROFILIS DOV1 Softing Industrial Au mobilitive Rover FA FROFILIS DOV1 Softing Industrial Au instructive ROVER FA Implicitive Rover FA FROFILIS DOV1 Softing Industrial Au instructive ROVER FA HART Softing Industrial Au Instructive ROVER FA Vender Group Type Instreed Dover unselected devices too If Contant Au Instructive ROVER Softial MORBITS Fault Au/OBITS Fault Au/OBITS MORBITS Fault Au/OBITS		- %6 Gateway	mobiLink HART	HART	Softing Industrial Aut
Vendor Group Type Protocol ¥ VEA Haret Works Vendor VEA Vendor Group Type Protocol ¥ VEA Burtoch VEA Vendor VEA Vendor Group Type Protocol ¥ VEA Burtoch VEA Vendor VEA			mobiLink PA	PROFIBUS DP/V1	Softing Industrial Aut
Implicition Romer HART HART Softing Industrial Au mobilities Noner IA Softing Industrial Au Productinal Au Instruction WVD PHART HART Softing Industrial Au Instruction VVD Phartocol VEGA Grinkholm Kit VVGD Photocol VEGA MINDB IS Carial			mobiLink Power FF	FF H1	Softing Industrial Aut
Vendor Group Type Protocol VEGA Standards Au Vendor Group Type Protocol VEGA Standards Au Vendor Group Type Protocol VEGA Standards Au Vendor Group Type Vendor Group Type Vendor Group Type			mobiLink Power HART	HART	Softing Industrial Aut
Vendar Group Type Protocol Vendar Group Type Type Type Type Type Type Type Typ			mobiLink Power PA	PROFIBUS DP/V1	Softing Industrial Aut
Vender Grunp Type Protocol VEGA Bluetooth WD Flottocol VEGA Grinshader KS Vender Group Type Protocol VEGA Grinshader KS VEGA Grinshader KS Umoder Group Type Fretocol VEGA Grinshader KS VEGA Grinshader KS Umoder Group Type Fretocol VEGA Grinshader KS VEGA Grinshader KS			smartLink HW-DP HART	HART	Softing Industrial Aut
Yeadar Group Type Protocol VEGA Givenbarre K VeGA Givenba			smartLink SW-HT HART	HART	Softing Industrial Au
Vendor (Group Type Protocol EVEA Ethement WO Protocol VEGA Grinthaber KG			★ VEGA Bluetooth	VVO BT Protocol	VEGA Grieshaber KG
Show unselected devices too					VEGLO : L L VE
		Vendor Group Type Protocol	VEGA Ethernet	VVO Protocol	VEGA Griesnaber KG
		Vendor Group Type Protocol	VEGA Ethernet	WO Protocol MODRUS over rerial line	VEGA Grieshaber KG

 Click [OK] to add the device to a project. The selected smartLink node (HW-DP or SW-HT) appears underneath the Host PC bar. At this point, the online state is disconnected (⁴).

Project				中 >	<
Device tag	Address	0	36	Device type (DTN	1)
📕 HOST PC					
smartLink HW-DP HART		Ϊ	۶Þ	🕝 smartLink HV	/-
<		_			•
NONAM 🔹 🔍	E>		A	dministrator	

5.3 Setting connection parameters

To connect to the smartLink device you must provide an IP address and login credentials. For the HART IP communication you will additionally need to enter a port number on which the smartLink HART IP server is running.

- 1. Right-click the node **smartLink** instance in the project view.
- 2. Select **Parameter** from the menu.

Project							Ψ×
Device tag		Address	0	١	Device type (DTM)	Status	Timestamp status
HOST PC							
smartLink HW	Coni Disci Load	nect onnect I from dev e to device	ice				
	Para	meter	0				
	Simi	ulation	e				
	Diag	nosis					
	Disp	lay channe	ls				
	Char	nnels				•	
	Торо	ology Scan					
	Diag	nostic Sca	n				
	Up-/	Download	-Mar	nagi	er		
	Print	t					
	Addi	itional fun	ction	s		+	
1	Add	device					
	Exch	ange devi	ce				
1	Dele	te device					
	Prop	erties < sm	artLi	nk I	HW-DP HART> smartLink HW-D	P HART	

3. Enter the **IP address** of the smartLink device, the **port number** of the IP server, as well as the **user name** and **password** of the account to your smartLink.

PACTware							-		×
<u>File E</u> dit <u>V</u> iew <u>P</u> rojec	t <u>D</u> evice E <u>x</u> tras <u>W</u> indow <u>H</u> e	elp							
i 🗅 🧉 🛃 🎒 👘 - i 🕵) 🚾 🖾 🖄 🖉 🛯 🦉 🥻								
Project	4 ×	💿 smartLin	k HW-DP	HART Parameter				4 Þ	×
Device tag	Address 🚺 🕸 Device type (DTM)		Device:	smartLink HW-DP H	IART	optir	nizel 💼	o	Dev
HOST PC			Product:	smartLink DTM		5	DIL	тg	lice o
smartLink HW-DP HARI	🖋 🖓 🌚 smartLink HW-l		vendor:	Softing Industrial A	utomation GmbH				atalo
									ğ
		Network S	ettings		Login Credenti	ials			
		IP address	1	0.0.0.0	User name	!			
				E004	Pressured				
		nAn i ir poit		5034	Fassword	•			-
					OK	Cancel		Apply	
<	>	\$⊳	11						
I I I I I I I I I I I I I I I I I I I	1E> Administrator								.:

- 4. Click **[Apply]** to confirm the change.
- 5. Click **[OK]** to close the interface window



Note

The login password is encrypted and not shown in clear text. The HART IP port must have the same configuration as the smartLink port.

5.4 Connecting a smartLink node

1. Right-click the **smartLink** instance.

Project			4 ×							
Device tag	Address 🕕 🎝 🛱 Device type (DTM)	Status	Timestamp status							
B HOST PC										
SmartLink HW-DP H/	Connect									
\$ \$	Disconnect									
۵	Load from device									
<u>1</u>	Store to device									
	Parameter	Parameter								
	Measured value									
	Simulation									
	Diagnosis									
	Display channels									
	Channels	hannels •								
	Topology Scan									
	Diagnostic Scan									
	Up-/Download-Manager									
	Print									
	Additional functions	•								
<u>\$</u>	Add device									
	Exchange device									
<u>8</u>	Delete device									
	Properties < smartLink HW-DP HART> smartLink	HW-DP HART								
NONAM	E> Administrator									

2. Select Connect.

If the connection is successful, the online state symbol change to 🕰

PACTware - [smartLink SW-HT HAR	(T # Parameter]								- 0
File Edit View Project I	Device Extras Window Help								- 6
🗋 🗋 🚰 🖓 👘 🖓 🕅	🗖 🕉 荷 🔟 🗃 🧋 🐏 😭 🔤]							
Project			# ×		Device:	smartLink SW-HT HART			optimizel
Device tag	Address 🕕 🖏 Device type	Status	Timestamp status		Product:	smartLink DTM			sorting
SmartLink SW-HT HART	🖋 🎫 🕘 smartLin	0			venuor.	Sorting industrial Automation Gillon			
				Network	Settings		Login Credential	3	
				IP address		10.20.237.75	User name	administrator	
				HART IP p	ort	5094	Password	•••••	
								ОК	Cancel Apply
				\$					

A successful connection is typically displayed in the project view by a symbol next to smartLink. In PACTware this is a closed connector. In the FDT status model a successful connection can be inactive (standby) or active (online). An active connection is displayed in PACTware by a **green** background of the connector symbol. A connection which has been successfully created by smartLink DTM with smartLink is always shown as being active.

5.5 Setting the channel count

It is recommended that you set a sufficiently high enough channel count for each smartLink instance in the project according to the number of connected HART devices.

Using the function **Set channel count** you can assign any number of 1 to 99 channels to the next smartLink that is added to the project. If you decide to leave the channel count unchanged, the next node added to the project will by default have 100 channels assigned.

- 1. Right-click a smartLink node (HW-DP or SW-HT) in the project view.
- 2. Navigate to Additional functions → Set channel count of new smartLink nodes...

PACTware			
File Edit View Project	Device Extras Window Help		
i 🗅 💕 🖬 🎯 👘 - i 😫 🕅	🔲 🍀 🌾 🙎 🕐 🕕 🔤		
Project	# ×		
Device tag			
B HOST PC			
SmartLink HW-DP HART	Connect		
**	Disconnect		
De la	Load from device		
2	Store to device		
	Parameter		
	Measured value		
	Simulation		
	Diagnosis		
	Display channels		
	Channels •		
	Topology Scan		
	Diagnostic Scan		
	Up-/Download-Manager		
	Print		
	Additional functions		Compare offline
<u>•</u>	Add device		Compare online
	Exchange device		Set value
	Delete device		Audit trail
	Properties <smartlink hart="" hw-dp="">smartLink HW-DP HART</smartlink>		Scan list
			Edit channel assignments
			Set channel count of new smartLink nodes
			Iroubleshooting
			About smartLink UTM
		N	Write device data to file

3. Set the number of channels for the new **smartLink** node in the **Channel count** field.

-					
🎱 smartLi	ink HW-DP H/	ART Set channel count of new smartLin	k nodes		4 0 3
	Device:	smartLink HW-DP HART		optimiz	el 💼 🔿
1	Product:	smartLink DTM		S	otting
	Vendor:	Softing Industrial Automation GmbH	I		Ð
Channel cou	int 🖋 35				
			OK	Cancel	Apply
	1				

- 4. Click **[Apply]** to confirm the change.
- 5. Click **[OK]** to close the interface window.

smartLin	k HW-DP HA Device: Product: Vendor:	RT Set channel count of new smartLink nodes smartLink HW-DP HART smartLink DTM Softing Industrial Automation GmbH	optimizel Softing
Channel coun	smartLi	nk HART DTM Setting the channel count to values greater than 50 to delays when opening the channel assignment, ac smartLink DTMs to the project etc. Do you want to save the setting?) O may lead dding new
		Yes	No
		ОК	ancel Apply



Note

The default value for channel count is 100. If a channel count greater than 500 is set, you will see a message box that more channels may lead to delays. Use a reasonable count for the project.



Note

The new channel count will be applied only to the smartLink instance added to the project. The channel count of all existing nodes in the project will remain unchanged.

5.6 Assigning a channel

5.6.1 smartLink HW-DP HART

In a smartLink HW-DP network configuration, HART devices are connected to PROFIBUS remote IO modules on the PROFIBUS side. smartLink DTM is used to map them with FDT communication channels. For this purpose, smartLink DTM must know the PROFIBUS address information of the HART devices. Using the function Edit channel assignments ... this information can be provided.

- 1. Right-click the node **smartLink HW-DP HART** in the project view.
- 2. Navigate to Additional functions → Edit channel assignments...

Project			
Device tag	Address 🚺 🕸 Device type (DTM)	Status	Timestamp status
HOST PC			
smartLink HW-DP HART	/ KID: A smartLink HW-DP HART	0	7
40	Connect		
-0-	Disconnect		
<u>Q</u>	Load from device		
<u>19</u>	Store to device		
	Parameter		
	Measured value		
	Simulation		
	Diagnosis		
	Display channels		
	Channels	•	
	Topology Scan		
	Diagnostic Scan		
	Up-/Download-Manager		
	Print		
	Additional functions	+	Compare offline
•	Add device		Compare online
-	Exchange device		Set value
8	Delete device		Audit trail
	Properties < smartl ink HW-DP HARTs smartl in	HW-DP HART	Scan list
			Edit channel assignments
			Set channel count of new smartLink nodes
			Troubleshooting •
			About smartLink DTM
			M Write device data to file
	E> Administrator		

The Edit channel assignments window is shown.

101	Device: Product: Vendor:	smartLink HW-DP H smartLink DTM Softing Industrial A	HART Lutomation GmbH						optimize!	ing
1	Channel ID	Station Address	Slot Number	Module Channel	User Tag	1	Linked Device DTM	Long Tag		ŕ
	Channel1									
	Channel2 Channel2									
	Channel4									
	Channel5									
	Channel6									
	Channel7									
	Channel8									
	Channel9									
	Channel10									
	Channel11									
	01									
	Channel 12									
OF	FIBUS Remote I/C	D Module Channel Selec	tion	Module channel		Commu Usertag	inication Channel			
or	TIBUS Remote I/C address	D Module Channel Selec	tion	Module channel		Commu Usertag	inication Channel			

The top frame of the window shows the FDT channels which you can edit below the table. The first column of the table shows the state of the assignment, which can be one of the input states as described in Section <u>smartLink DTM user interface explained</u>⁽¹²⁾. The second column is reserved for the channel ID and cannot be changed. From the third to the fifth column the PROFIBUS parameters Station address, slot number and module channel for the FDT channel are listed.

To change the settings simply select a line in the table and put the values in the edit fields Station address, Slot number and Module channel, where

- **Station address**: The station address of the PROFIBUS Remote I/O the HART device is connected to. The valid value is an integer between 0 and 126.
- Slot number: The slot number of the PROFIBUS Remote I/O module the HART device is connected to. The valid value is an integer between 0 and 255.
- **Module channel**: The zero-based number of the PROFIBUS Remote I/O module channel the HART device is connected to. The valid value is an integer between 0 and 255.

The sixth column "User Tag" helps you identify the channels. If you do not enter any value in the edit field User tag it will be automatically populated by the three previous parameters in the format Ax_Sy_Cz, where x, y and z are the station address, the slot number and the module channel. You can change this any time by typing your own text in the edit field User tag.

The last two columns provide information for easy configuration: **Linked Device DTM** shows if any device DTM is already inserted in the channel and **Long Tag** column shows the long tag of the HART device in the channel, after the action **[Read from smartLink]** is performed.

[Read from smartLink]

When you select this function, the PROFIBUS parameters of the available HART devices are read and auto-populated to the table. To run this action the smartLink device must be connected and its IP address, login credentials and the HART IP port must be configured in bus configuration view correctly. However, bear in mind that the smartLink HW-DP HART node in FDT project must be in offline state, as otherwise this button is disabled.

[Apply]

This confirms the current selected assignments. The values in the table for assignment are checked and saved if valid. In the event of problem with the data a message box is shown.

[OK]

Applies the settings and closes the interface window.

[Cancel]

Closes the interface window without applying the settings.

There are two additional actions defined in the context menu of any selected rows in the channel table:

Perce: manufulk HW-OP HART Wender: semantuk HW. Wender: softing Industrial Astomation GmbH M harmel ID M harmel ID Sation Address Soft Number Model Channel User Tag Model Channel User Tag M harmel ID Sation Address Soft Number Model Channel User Tag Model Channel Soft Number Othernel 2 2 Clear selected assignments Soft Number Oharmel 3 Reset selected assignments to original values Softmande Softmande Oharmel 3 Soft Number Clear selected Doubled Channel Selection PROFIBUS Remote I/O Module Channel Selection Mun preamble count Soft Number Mun preamble count Soft Number Munered assignments are vald. Read from smattlink OK		indirection interest	JP MAKI Edit C	hannel assignments						4
M Channel ID Station Address Sixt Number Module Channel User Tag Min. Preamble Court Linked Device DTM Long Tag Channel 1 1 1 0 A1,51,C0 5 Channel 2 2 1 A1,52,C1 5 Channel 2 Clear selected assignments 5 Channel 6 Channel Clear selected assignments to original values 5 Channel 7 Channel 7 S S S S S S S S S S S S S S S S S S		Device Product Vendor	smart I smart I Softin	ink HW-DP HART ink DTM g Industrial Automal	tion GmbH				optimizel	ting
Oramel 1 1 0 A1,51,00 5 Ohamel 2 2 1 A1,52,01 5 Ohamel 3 Clear selected assignments 5 Ohamel 4 Rest selected assignments to original values 5 Ohamel 5 5 Ohamel 6 Rest selected assignments to original values 5 Ohamel 7 5 5 Ohamel 9 5 Ohamel 9 5 Ohamel 9 5 Ohamel 9 5 Ohamel 10 5 PROFIBUS Remote I/O Module Channel Selection Sation address 2 Sit number 1 Module channel Mon preamble count 5 User tag A2_51_00 We cancel 4 0 Read from smattlink 0 Cancel	м	Channel ID	Station Address	Slot Number	Module Channel	User Tag	Min. Preamble Count	Linked Device DTM	Long Tag	^
Channel 2 1 2 1 ALS2 C1 5 Channel 4 Clear selected asignments 5 5 Channel 4 Clear selected asignments 5 Channel 6 Reset selected asignments to original values 5 Channel 6 5 Channel 7 5 Channel 8 5 Channel 8 5 Channel 9 5 Channel 10 5		Channel1	1	1	0	A1_S1_C0	5			
Charred 3 2 Charred 5 5 Charred 5 5 5 Charred 6 Reset selected assignments to original values 5 Charred 7 5 5 Charred 8 5 5 Charred 9 5 5 Charred 9 5 5 Charred 9 5 5 Charred 10 5 5 PROFIBUS Remote I/O Module Charred Selection 5 Station address 2 Stat number 1 HART Communication Communication Charred 0 Min. preamble court 5 User tag A2_S1_C0 Wit charred seignments are vald. 0 0 Apply		Channel2	6	2	1	A1_S2_C1	5			
Channel Clear selected assignments 5 Channel Reset selected assignments to original values Channel Reset selected assignments to original values Channel Reset selected assignments to original values Channel Communication Channel HART Communication Communication Channel Mn. preamble court 5 User tag A2_51_C0 OK Cancel Apply Read from smatLink OK Cancel Apply	1	Channel3	2	1	0	A2 \$1 C0	5			
Channel5 Channel7 Channel7 Channel9 Channel Communication Communication Channel Mn. preamble court Communication Comm		Channel4	C	lear selected assignn	nents		5			
Oharmel6 5 Oharmel7 5 Oharmel8 5 Oharmel9 5 Oharmel9 5 Oharmel9 5 Oharmel10 5 PROFIBUS Remote I/O Module Channel Selection 0 HART Communication Communication Channel Min. preamble count 5 Usertag Image: Algorithm of the selection		Channel5	R	eset selected assignn	nents to original v	alues	5			
Dramel 5 Dramel 5 Dramel 5 Dramel 10 5 PROFIBUS Remote I/O Module Channel Selection Station address 2 Stot number 1 Module channel 0 HART Communication Channel Min. preamble count 5 User tag 2 A2_S1_C0 We channel assignments are valid.		Channel6	-				- 5			
Channels 5 Channel 0 5 PROFIBUS Remote I/O Module Channel Selection Station address 2 Station address 2 Station address 2 Station address 2 Station address 0 HART Communication Communication Channel Min. preamble court 5 User tag A2_S1_C0		Channel /					5			
Ohannel10 5 PROFIBUS Remote I/O Module Channel Selection Station address 2 MART Communication Communication Channel Mannel assignments are valid. 0		Channel9					5			
PROFIBUS Remote I/O Module Channel Selection Station address 2 Stat number 1 Module channel 0 HART Communication Communication Channel 0 0 4 Mn. preamble count 5 User tag A2_S1_C0 4 Wide dameet are valid. 0 0 Apply		Channel 10					5			
HART Communication Communication Channel Min. preamble count 5 User tag ✓ A2_51_C0 Ni channel assignments are valid. OK Cancel Apply	St	ation address	12	Slot	number	/ 1	Module cha	nnel 🖋 0		
Mn. preamble court 5 User tag A2_51_C0			-							
N channel assignments are valid. Read from smatLink OK Cancel Apply	н	ART Communi	ation	Con	nmunication Cha	nnel				
Read from smatLink OK Cancel Apply	<u>н</u> м	ART Communie	cation t 5	Con	nmunication Cha	A2_S1_C0				
Read from smatLink OK Cancel Apply	H M All c	ART Communie n. preamble cour hannel assignme	cation It 5	Con	nmunication Char	A2_S1_C0				
Read from smatLink OK Cancel Apply	H M All c	ART Communie	nt 5	User	nmunication Chai	A2_S1_C0				
	H M All c	ART Communie n. preamble cour hannel assignme	nts are valid.	User	munication Chai	A2_S1_C0				
	H M All c	ART Communit	cation It 5 Its are valid.	User	mmunication Char	nnel		ОК	Cancel	Apply

- Clear selected assignments: PROFIBUS parameters and User Tag of the assignment will be emptied.
- Reset selected assignments to original values: the settings you had prior to your current changes are restored.



Note

To avoid any conflict with on-line operations the assignments can only be changed in offline state.

5.6.2 smartLink SW-HT HART

smartLink DTM is used to map the remote IO modues (RIOs) with FDT communication channels. For this purpose, smartLink DTM must know the address information of the HART devices. Using the function **Edit channel assignments** ... this information can be provided.

- 1. Right-click the node **smartLink SW-HT HART** in the project view.
- 2. Navigate to Additional functions → Edit channel assignments...



The Edit channel assignments window is shown.

💿 sn	artLink SW-HT HAR	T Edit channel assignments.	-				4 Þ 🗙
	Device: Product: Vendor:	smartLink SW-HT HART smartLink DTM Softing Industrial Automat	ion GmbH				softing
М	Channel ID Channel 1 Channel 2 Channel 3 Channel 4 Channel 6 Channel 7 Channel 8 Channel 9 Channel 10 Channel 11 Channel 12	RIO Name	Module Name	Module Channel User Tag	Unked Device DTM	Long Tag	^
Remo	ame	nel Selection Module nar	ne	Module channel	Communication Cha	annel	
All ch	annel assignments are v	alıd.				OK	Cancel Apply

The top frame of the window shows the FDT channels which you can edit below the table. The first column of the table shows the state of the assignment, which can be one of the input states mentioned in Section <u>smartLink DTM user interface explained</u>⁽¹²⁾. The second column is reserved for the channel ID and cannot be changed. From the third to the fifth column the parameters RIO Name, Module Name, Module Channel relating to the FDT channel.

To change the settings simply select a line in the table and put the values in the edit fields Station address, Slot number and Module channel, where

- RIO Name: The field describes the name the operator defined in the smartLink SW-HT for the Ethernet Remote I/O the HART device is connected to.
- Module Name: The field describes the name the operator defined in the smartLink SW-HT of the Ethernet Remote I/O module the HART device is connected to.
- Module Channel: The zero-based number of the Ethernet Remote I/O module channel the HART device is connected to. The valid value is an integer between 0 and 255.

The sixth column **User Tag** helps you identify the channels. If you do not enter any value in the edit field User tag it will be automatically populated by the three previous parameters in the format Ax_Sy_Cz, where x, y and z are the station address, the slot number and the module channel. You can change this any time by typing your own text in the edit field User tag.

The last two columns provide information for easy configuration: **Linked Device DTM** shows if any device DTM is already inserted in the channel and **Long Tag** column shows the long tag of the HART device in the channel, after the action **[Read from smartLink]** is performed.

😨 sn	nartLink SW-HT HA	RT Edit channel assignments.						4 🗈 🕽
	Device: Product: Vendor:	smartLink SW-HT HART smartLink DTM Softing Industrial Automati	ion GmbH					softing
м	Channel ID	RIO Name	Module Name	Module Channel	User Tag	Linked Device DTM	Long Tag	^
	Channel1	5094 Flex	M1	3	5094 Rex M1 C3		Long Tag PR Electronics	
	Channel2 Channel3 Channel4 Channel5 Channel6 Channel7 Channel8 Channel9 Channel10 Channel11 Channel12	5094 Hex	M1	6	5094 Rex_M1_C6		Long Tag Kohne	
Remo	te I/O Module Cha	nnel Selection				Communication Cha	nnel	
RIO ni	ame 5094 Fie	x Module nan	ne M1	Modu	le channel 3	Usertag [094 Flex_M1_C3]
Read Read	ling the channel assign ling the channel assign	ments from the smartLink. ments from the smartLink succeeds	ad.					< v
Rea	ad from smartLink						ОК Са	ncel Apply

[Read from smartLink]

When you select this function the Ethernet parameters of the available HART devices are read and auto-populated to the table. To run this action the smartLink device must be connected and its IP address, login credentials and the HART IP port must be configured in the bus configuration view correctly. However, bear in mind that the smartLink SW-HT HART node in FDT project must be in offline state, as otherwise this button is disabled.

[Apply]

This confirms the current selected assignments. The values in the table for assignment are checked and saved if valid. In the event of problem with the data a message box is shown.

[OK]

Applies the settings and closes the interface window.

[Cancel]

Closes the interface window without applying the settings.

There are two actions defined in the context menu of any selected rows in the channel table:

Contraction of the	Device: Product: Vendor:	smartLink SW-HT HART smartLink DTM Softing Industrial Automa	tion GmbH					softing
м	Channel ID	RIO Name	Module Name	Module Channel	User Tag	Linked Device DTM	Long Tag	^
	Channel1	5094 Flex	M1	3	5094 Flex_M1_C3		Long Tag PR Electronics	
	Channel2	5094 Flex	M1	6	5094 Flex M1 C6		Long Tag Krohne	
	Channel3				Clear sel	ected assignments		
	Channel4				Reset sel	ected assignments to orig	inal values	
	Channel5							
	Channel7							
	Channel8							
	Channel9							
	Channel 10							
	Channel 11							
emo	te I/O Module Ch	annel Selection				Communication Char	nel	
0 na	me 5094 Fi	ex Module na	ime M1	Modu	le channel 6	Usertag 5	094 Flex_M1_C6	
ad ad	me 5094 Fi	ments from the smartLink.	ame M1	Modu	le channel 6	Usertag 5	094 Rex_M1_C6	

- Clear selected assignments: parameters and User Tag of the assignment will be emptied.
- Reset selected assignments to original values: the settings you had prior to your current changes are restored.



Note

To avoid any conflict with on-line operations the assignments can only be changed in offline state.

5.7 Connecting a HART field device

- 1. Right-click a node of the HART device in the project view. The context menu opens.
- 2. Select **Connect** in the context menu.



A successful connection is typically displayed in the project view by a symbol next to the device.



You now have access to the connection-related services of the DeviceDTM which typically include:

- Online parameterization
- Upload/download of device parameters
- Device-specific functionality for startup or diagnostic purposes

This completes the introduction to smartLink DTM. To work efficiently with smartLink DTM, continue exploring the additional functions. The following Chapter about smartLink DTM user interface describes these functions in detail.

5.8 Reading connected smartLink node

In this Chapter you will learn how to scan your smartLink node for connected HART devices (RIOs) and how to access and parameterize these devices.

- 1. Right-click to **disconnect** (**4**) the smartLink to proceed.
- 2. Right-click the smartLink instance and select Additional functions → Edit channel assignments... This is done to retrieve the RIO configuration data from the connected smartLink device.



3. Click **[Read from smartLink]** and wait for some time to retrieve RIO configuration data from the connected smartLink device (remote IOs, IOModules, Channels). The Remote I/O module channels that are automatically recognized by the smartLink will be read and assigned to the smartLink DTM communication channels.



Note

You can also retrieve individual RIOs manually by entering the name in the search fields.

ice tag Address () 20 () Device type Status Timestamp status Software Versit Col Status Image:	ect			# ×		Device:	smartLink SW-HT HART						optimize!
HOT PC International Software Mode Charmel Mode Charmel Unread To Software Mode Charmel Mode Charenel Mo	ce tag	Address 🛈 🖏 Device type	Status	Timestamp status		Product:	smartLink DTM						SOLUTIO
M Operation Operation Mode Name Mode N	HOST PC					vendor:	Softing Industrial Automa	Stion GmbH					
Control D Overlag	/ smartLink SW-HT HART	🖋 🕸 😋 smartLini	0			0	010 Marca	Mark In Marca	Martin Channel	Here The	United Device DTM	Loss Tex	
✓ Ourment Apple State in it 0 And State Note Note <td< td=""><td></td><td></td><td></td><td></td><td>M</td><td>Channel ID</td><td>NO Name</td><td>Module Ivame</td><td>Module Channel</td><td>User Tag</td><td>Unked Device DTM</td><td>Long Tag</td><td></td></td<>					M	Channel ID	NO Name	Module Ivame	Module Channel	User Tag	Unked Device DTM	Long Tag	
/ Jumrel E1200M n1,44 0 E1200M n1,44,02 / Jumrel E1200M n1,24 0 E1200M n1,24,02 / Ownel E1200M n2,44 0 E1200M n1,24,02 / Ownel E1200M n2,240 0 E1200M n1,24,02 / Ownel E1200M n2,240 0 E1200M n2,140 / Ownel E1200M n3,24 0 E1200M n2,140 / Ownel E1200M n3,240 0 E1200M,12,92,02 / Ownel E1200M n3,240 0 E1200M,12,92,02 / Ownel E1200M n3,240 0 E1200M,14,20,02 / Ownel E1200M n4,600 2 E1200M,14,20,02 / Ownel E1200M n4,600 1 1 8,64,72,00 / Ownel E120M State Extende 1 1 1 / Ownel E120M State Extende 1 1 1 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>Channel1</td> <td>Allen_Bradley</td> <td>m1</td> <td>0</td> <td>Allen_Bradley_m1_C0</td> <td></td> <td>M_AB_PLC_M1_0_ABB</td> <td></td>						Channel1	Allen_Bradley	m1	0	Allen_Bradley_m1_C0		M_AB_PLC_M1_0_ABB	
/ - Dennetis E (2008) n.1,41 2 E (2008) n.2,40,2 / - Dennetis E (2008) n.2,40,0 1 E (2008) n.2,40,0 / - Dennetis E (2008) n.2,40,0 1 E (2008) n.2,40,0 / - Dennetis E (2008) n.2,80,0 0 E (2008) n.2,80,0 / - Dennetis E (2008) n.2,80,0 0 E (2008) n.2,80,0 / - Dennetis E (2008) n.3,84,0 0 E (2008) n.2,80,0 / - Dennetis E (2008) n.4,80,0 2 E (2008) n.2,84,0,0,2 / - Dennetis E (2008) n.4,80,0 2 E (2008) n.4,84,0,0,2 / - Dennetis R.Saki n.2 0 R.Saki,n,2,0,5 N.574,44,42,49,0,0 / - Dennetis R.Saki n.2 6 R.Saki,n,2,0,5 T.574,44,42,49,0,0 / - Dennetis R.Saki n.2 5 Strategic Betace,n,1,1,1,2 T.574,444,24,49,0,0 / - Dennetis R.Saki n.2 Strategic Betace,n,1,1,1,2 T.574,444,24,49,0,0 T.574,444,24,49,0,0 / - Denn						Channel2	ET200M	m1_4AI	U	E1200IM_m1_4AI_C0		M_E1200IM_M1_0_R0	
						Channel3	E1200M	m1_4AI	2	E1200IM_m1_4AI_C2		1_E1200IM_M1_2_BAU	
// Durindb £1/2004 m1,2/4 0 ET2004/m1,2/4/2,0 M_ET2004/m1,0/10. // Durindb £1/2004 m2,2/40 1 ET2004/m1,2/4/2,0 M_ET2004/m1,0/10. // Durindb £1/2004 m2,2/40 0 ET2004/m1,2/4/2,0 M_ET2004/m1,0/10. // Durindb £1/2004 m2,2/40 0 ET2004/m1,2/4/2,0 M_ET2004/m2,1/10. // Durindb £1/2004 m2,2/40 0 ET2004/m1,2/4/2,0 M_ET2004/m2,1/4/2,0 // Durindb £1/2004 m2,2/40 0 ET2004/m1,2/4/2,0 M_ET2004/m2,1/4/2,00 // Durindb £3/44 m2 6 R.Badrijm,2/6,5 T_ST44/M2,1/90. // Durindb R.Badrijm,2/6,5 T_ST44/M2,1/90. T_ST44/M2,1/90. M_ET2004/m2,1/4/2,000. // Durindb R.Badrijm,2/6,5 T_ST44/M2,1/90. T_ST44/M2,1/90. M_ET2004/m2,1/4/2,000. // Durindb R.Badrijm,2/6,5 T_ST44/M2,1/90. M_ET2004/m2,1/90. M_ET2004/m2,1/90. // Durindb R.Badrijm,2/6,5 T_ST44/M2,1/90. M_ET2004/m2,1/90. M_ET2004/m2,1/90. // Durindb R.Badrijm,2/6,5 T_ST44/M2,1/90. M_ET2004/m2,1/90. M_ET2004/m2,1/90. // Durindb Rudingb Rudingb M_ET2004/m2,1/90. M_ET2004/m2,1/90.						Channel4	E1200M	m2_4A()	1	E1200IM_m2_4AQ_C1		M_E1200IM_M2_1_FIS	
Vulnere E. (Austin M. 2001) Vulnere E. (Austin M. 20						Channelb	E1200M	m1_2AJ	0	ET200M_m1_2AI_C0		M_E1200M_M1_0_TU	
/ Jummi E Lickon M M_2M 0 E1200M (M_2)(M_2) 1/2120M (M_2)(M_2) / Demmi E E1200M (M_2)(M_2) E1200M (M_2)(M_2) 1/2120M (M_2)(M_2) 1/2120M (M_2)(M_2) / Demmi E E1200M (M_2)(M_2) E1200M (M_2)(M_2)(M_2) 1/2120M (M_2)(M_2)(M_2) 1/2120M (M_2)(M_2)(M_2)(M_2) / Demmi D E3841 (M_2)(M_2) 1/2120M (M_2)(M_2)(M_2)(M_2)(M_2)(M_2)(M_2)(M_2)						Channelb	E I ZUUM	m2_2AU		E1200M_m2_2AO_C1		M_E1200M_M2_1_FIS	
A Concerning E Rade = a_2 00 2 0 From 2 - 2 0 K, STARL (N2, SNE (N2, S						Channel/	E1200M	m3_8AI	0	E1200M_m3_8AI_C0		1_E1200M_M3_0_BA0	
Lowers 1 1 Schweize Betters n 1 1 Schweize Detters n 1 1 Schweize Betters n 1 2 Schwe						Channel8	E 1200M	m4_840	2	E1200M_m4_8A0_C2		M_E1200M_M4_2_FIS	
Larene 10 Hode _ Botto a _ 2 General _ Schoole _ Botto a _ 2 General _ Schoole _ Botto a _ 1 Schoole						Channel9	R.Stahl	m2	0	H.Stahl_m2_C0		M_STAHL_M2_0_MUE	
Image: Control 2: Schwardt 2: <t< td=""><td></td><td></td><td></td><td></td><td></td><td>Channel 10</td><td>R.Stahl</td><td>m2</td><td>6</td><td>H.Stahl_m2_C6</td><td></td><td>1_STAHL_M2_6_KHO</td><td></td></t<>						Channel 10	R.Stahl	m2	6	H.Stahl_m2_C6		1_STAHL_M2_6_KHO	
Consider a source of the						Channelli	Schneider_Electrics	mi		Schneider_Electrics_m1		1_SE_M580_M1_1_PR	
Resete I/O Model Charrel Selection Communication Charrel Rio name / Rein_Bradery Model name / mil Model charrel / 0 User tag / Rein_Bradery_m_L_C Reading the charrel assignments from the mattick. Reading the charrel assignments from the mattick. Reading the charrel assignments from the mattick.						Channel 12	Schneider_Electrics	m	2	Schneider_Electrics_m1.		M_SE_M580_M4_0_ABB	
RO name Modele name Int Modele channel Int User tag Recr.@ndrug.m1_CD Rading the durined assignments from the smattlick readed by it channel assignments from the smattlick readed by it channel assignment from the smattlick Recr.@ndrug.m1_CD					Remot	e I/O Module Ch	annel Selection				Communication Char	nnel	
Reading the channel assignments from the smatLink. Reading the channel assignments from the smatLink accessed.					RIO nar	ne 🖌 Nen_B	radley Module n	ame 🖌 m1	Modu	le channel 🖋 🛛	Usertag 🖌 🖉	Nien_Bradley_m1_C0	
					Readi Readi	ng the channel assig ng the channel assig	nments from the smartLink. nments from the smartLink succee	ded.					

4. Click [Apply].

The smartLink RIO configuration has been saved to the instance of the smartLink shown in PACTware.



Note

You can add a device separately by right-clicking on the smartLink instance and then selecting **Add device** or by using the scan topology.

5. Right-click on the **smartLink** instance and select **Scan Topology**.

The smartLink DTM tool will display the HART devices which are connected to the channels of your smartLink node.

Project		X Device: smartLink SW-HT HART	optimizel
Device tag	Address 🚺 👯 Device type Status Timestamp st	atus Product: amartLink DTM	softing
B HOST PC		Vendor: Softing Industrial Automation GmbH	
smartLink SW-HT HART	Market Connect		
	db connect	M Channel ID RIO Name Module Name Module Channel User Tag Linked Device DTM Long Tag	^
	aga Disconnect	Channel1 Alen_Bradley m1 0 Alen_Bradley_m1_C0 M_AB_PLC_M1_0_ABB	
	De Load from device	Channel2 ET200IM m1_4AI 0 ET200IM_m1_4AI_C0 M_ET200IM_M1_0_R0	
	10 Store to device	Channel3 ET200IM m1_4AI 2 ET200IM_m1_4AI_C2 T_ET200IM_M1_2_BAU	
		Chamel4 E1200M m2_4AQ I E1200M_m2_4AQ_CI M_E1200M_m2_FIS	
	Parameter	ChampelS E1200M m1_241 0 €1200m[m1_241_00 M_2100 ChampelS E1200M m2.240 1 E1200M m2.240 C1 M_E1200M_21.E1S	
	Measured value	Chamber E1200M m2,280 1 E1200M m2,280 1 m E1200M m2,381 0 T E1200M m2,381 0 T E1200M m3, 281 0 T E1200M m3, 0 B11	
	Simulation	Channel8 ET200M m4 8A0 2 ET200M m4 8A0 C2 M ET200M M4 2 FIS.	
	Diagnosis	Oxannel9 B.Stahl m2 0 B.Stahl m2 0 M.Stahl m2 0 MUE	
		Channel10 R.Stahl m2 6 R.Stahl_m2_C6 T_STAHL_M2_6_KR0	
	Display channels	Channell1 Schneider_Bectrics m1 1 Schneider_Bectrics_m1 T_SE_M580_M1_1_PR	
	Channels	Channel12 Schneider_Bectrics m1 2 Schneider_Bectrics_m1 M_SE_M580_M4_0_ABB	~
	Topology Scan	Chandill Columbia at A Columbia at H MC HERO HI A D	
	Discontia Sec.		
	biagnostic scan	Remote I/O Module Channel Selection Communication Channel	
	Up-/Download-Manager		
	Print	RIO name Alen_Bradley Module name m1 Module channel 0 User tag Alen_Bradley_m1_C0	
	Additional functions	•	
	3 Add device	All channel assignments are valid.	^
	Exchange device		
	Delete device		
	Properties <smartlink hart="" sw-ht="">smartLink SW-HT H</smartlink>	ART	~
		Participanti i	And
		Nead from smartunk.	Abby



Note

If the long tag of the device has been set you can see it in the column Long Tag.

6. Click the run icon **b** to start the scan.

roject			🕈 × 📠 Diag	gnostic Scan 💿 sn	martLink SW+HT HART Para	meter 💿 smartLink SW-HT HART Edit cha	nnel assignme
evice tag Address 🚺 🍪 Device type (D 🕽 HOST PC	ITM)	Status	Timestamp s	Device: Product:	smartLink SW-HT HAI smartLink DTM	रा 	
SmartLink SW-HTHARI	Topology Scan						
	- Scan Path						-
	\HOST PC\ <smartlink hart<="" sw-ht="" td=""><td>>smartLink SW-H</td><td>THART</td><td></td><td></td><td></td><td></td></smartlink>	>smartLink SW-H	THART				
	Scan Tree						
	Jean nee						
	Device tag	Ad	dress Device type (DTM) Message	<u>^</u>		
	smartLink SW-HT HART	×	smartLink SW-HT				
	Channel1	*	Channel1				
	Channel2	*	Channel2				
	Thannels	*	Channel3				
	Channel4		Channel4				
	्र Channel5	÷	Channel6				
	÷ Channel7	÷	Channel7				
	······································	*	Channel®				
		*	Channel9			No issues for selected node	
	Channel10	*	Channel10				
	Channel11	*	Channel11				
	👳 Channel12	*	Channel12				
		*	Channel13				
	호 Channel14	*	Channel14				
	후 Channel15	*	Channel15				
	🝷 Channel16	*	Channel16				
	😨 Channel17	*	Channel17				
	호 Channel18	*	Channel18				
	😨 Channel19	*	Channel19				
	Channel20	*	Channel20		×		

The scan results are shown in the topology Scan Tree.

ican Path					
HOST PC\ <smartl< td=""><td>ink S</td><td>W-HT HA</td><td>RT>smartLink SW-I</td><td>HT HART</td><td></td></smartl<>	ink S	W-HT HA	RT>smartLink SW-I	HT HART	
ican Tree					
Device tag		Address	Device type (DTM)	Message	^
🗟 💿 smartLink SW	~		smartLink SW-HT		
🕀 🤋 Channel 1	*		Channel1		
📖 🚸 TI XXX	~	0	TH02/102/202		
🖃 😨 Channel2	*		Channel2		
TAG_30	*	0	Generic HART DTN		
🖃 😨 Channel3	~		Channel3		
	~	0	Generic HART DTN		
🖃 😨 Channel4	~		Channel4		
F00282	~	0	Generic HART DTN		
🕀 😨 Channel5	~		Channel5		
	~	0	Generic HART DTN		
🕀 😨 Channel6	~		Channel6		
F00282	~	0	Generic HART DTN		
- 🕀 😨 Channel7	~		Channel7		
	~	0	Generic HART DTN		
🕀 😨 Channel8	~		Channel8		
F00282	~	0	Generic HART DTN		
🕀 😨 Channel9	~		Channel9		
1	~	0	Generic HART DTN		
🕀 😨 Channel10	~		Channel10		
TAG	~	0	Generic HART DTN		
🕀 😨 Channel11	~		Channel11		
📖 🕂 SPS_MO	×	0	3337 HART	_	
- 🖯 😨 Channel 12	~		Channel12		
L 🚸	~	0	TH02/102/202		
- 🖯 😨 Channel 13	~		Channel13		
	~	0	Generic HART DTN		
🗧 🐺 Channel 14	~		Channel14		
< -				>	

- 7. Click [Close] to hide the scan window.
- 8. Right-click the **HART DTM device** and select **Connect**.

ce tag IOST PC			Address 🛛 🗱 Device type	Status	Timestamp status		Device: Product: Vendor:	smartLink SW-HT HART smartLink DTM Softing Industrial Automa	tion GmbH					soft	g
smartLink SW	V-HT	HART	/ 🕸 🚭 smartLinl	0			110	Dio Marca		N. 11. C	11	Listed Design DTM	Loss Tra		
 FNXX FNXX TAG_30 TAG_30 F002821: F002821: F002821: F002821: TAG 		Connect Disconnect Load from device Store to device Parameter Measured value Simulation Diagnosis Print		000000000000000000000000000000000000000			annel D annel1 annel2 annel3 annel3 annel6 annel6 annel6 annel9 annel9 annel10 annel11 annel11	NO Name Alen_Boxdey ET200M ET200M ET200M ET200M ET200M ET200M ET200M R Sahl Schneider_Bectros Schneider_Bectros	m1 m1_4Al m1_4Al m2_4AQ m1_2Al m2_2AQ m1_2Al m3_8Al m4_8AQ m2 m2 m2 m2 m1 m1	0 0 2 1 0 1 0 2 0 1 0 0 1 0 2 0 0 6 1 2 2 0 0 6 1 2 2	User rag Alen, Bradewy, m1_C0 ET2001M, m1_4AI_C0 ET2001M, m1_4AI_C2 ET2001M, m2_4A0_C1 ET2001M, m2_2A0_C1 ET200M, m2_2A0_C1 ET200M, m4_3A0_C2 ET200M, m4_3A0_C2 R Stahl, m2_C6 Schneider, Bectrica, m1_ Schneider, Bectrica, m1_	Lines Device D1M T1XXX (H02102/202) TAG_30 (Genetic HAR (Genetic HART D1M) F0028212 (Genetic HAR (Genetic HART D1M) F0028212 (Genetic HAR (Genetic HART D1M) F0028212 (Genetic HART D1M) TAG (Genetic	Lord Fag M.AB_PLC_UMI_D_ABB M_ET200M_MI_D_ROL TE7200M_MI_D_ROL M_ET200M_MI_D_TISL M_ET200M_MI_D_TISL M_ET200M_MI_D_TISL M_ET200M_MI_D_TISL M_ET200M_MI_A_ZISL M_ET200M_MI_A_ZISL M_ET200M_MI_D_ROL M_SE_MS00_MI_L_PR M_SE_MS00_MI_D_ROL M		
	10	Additional function	5			Remote	I/O Module Ch	annel Selection				Communication Chann	el		
	8	Delete device				RIO nam	e Allen_B	radley Module na	ime [m1	Modu	le channel 0	Usertag Ale	n_Bradley_m1_C0		_
	1	Properties <0,SPS_M	IOD1>[Channel11] 3337 HART			Al char	nel assignments ar	e valid.							-

9. Right-click the HART device and select **Load from device** or **Store to device** to load or change HART device parameters.

PACTware - [SPS_MOD1 # Online	parameterization]						- 🗆 ×
File Edit View Project	Device Extras Window Help						- 5 ×
: 🖬 😅 🖼 🖼 💷 : 1997 (; 1998) 443 (; Project		5	4 ×				
Device tan	Address 🗍 🎊 Device type	Status Timestam	3337	3337 HAR	T		
A HOST PC	nones G No beneedbe	010103	HART	PR electro	nics		
E Swart link SW-HT HART	/ 📭 🧑 smartlin	0	CORPUS CATION FORMORTON				electronics 🚦
	0 / 40 th 102/10	õ	🗖 🕲				
SPS MOD1	0	Ŏ	⊡- Online	^			ā
	0 / db (TH02/10	0	 Process variables 		Online		
TAG 20		0	- Dynamic Variables		Distal Value	85	
180_30	0 / sta III Generic H	0	Diagnostics/Service		Digital value	Cal 46,2300	
	0 sta Generic I	ő	Status		Digital Value	C 0000,0000 C	
	0 star Generic I	õ	- Calibration				
	0 sta Generic I	õ	- Write Protection		Loop current	4,000 mA	
		0	Device Variable Eugging	00	P\/ * mone	8N	
F0028212	0 / KD III Generic I	0	- Setup		i v stange	NB 0,000 ~	
1	0 / sta III Generic I	0	Variable Mapping				
TAG	0 / sla III Generic I	ő	Range Variables				
	0 star Generic I	õ	Process Sensor				
		<u> </u>	- Sensor Setup				
			Hanking output Brand Setu Upload Result Burkt Setu Burkt Setu Burkt C	<0,5P5_MOD1 > [Channel1 PACTware action active. One	X 1] 3337 HART moment please. Cancel]	Cose
			😰 Connected 🛛 🚨 Dev	ice 😰 👷	Planning Engineer		
			Error monitor				4 ×
							Refuch Save Clear
At ★ O <noname></noname>	Administrator						

10. Right-click a connected HART device and select **Parameter** → **Parameterization** (alternatively double-click) to open the parameter window of the HART device.

	PACTiware				- o ×
Note: Image: Marce in Marce i	File Edit View Project Device Extras Window Help D 🐸 🖬 🚳 🚳 - 🙀 😋 📼 🔛 😫 🗐 🦉 🦝				
Dec tage de la dons de	bject	0 9	🔀 🗹 KROHNE Parameterizati	on	4 Þ
Pint view Image: Control Image: Con	vice tag 0 🔍 🥸 Channel Address Status Ti HOST PC	mestamp status Device type (DTM) Device	HART®	Genetic HART DTM Krohne 9.0 ● △ ② 3 560.0 [12]	V
Piece down P	KROHNE / T Channel2 0	Sinarconk SW Sinarconk SW-Pri PART	0		
Plant view Plant		Bit Connect Parameter Standard Parameter Standard Outling Diagnoses Print Addition functions I Standard functions I Standard functions I Diagnoses Print Additions functions I Diagnoses I Private Generic HART DTM	ERDevice Diffice Paradetice Parameterization	Messaring Part ESCRIPT OD KROHN E Description DESCRIPT OD KROHN E E Usin message E E E Date 2007/2023 E E Device E E E Device E E E Device fixed fixed E E E Device fixed f	
Cota tate Bosconnected Code Tree Good Tree S PACTease	ent view Addresi () 7 (Device Type (CTM) Device Name of a plant parts	ta a Status	×		
Upde Inter⊕ s § PUCTueen			Data state Disconnected Cyclic Retresh		
			S PACTware		
			8.00000		
error monitor			Error monitor		ę
Serial Date Source Error message			Serial Date	Source Error message	
Balanch See C					Refresh Save Clear

11. Parameterize the HART device and click [Save] to store your changes.

5.9 Additional user interface menus

5.9.1 About smartLink DTM

Select the function **About** smartLink DTM ... to see product information about smartLink DTM . This function is available for all users.

- 1. Right-click a smartLink node in the project view.
- 2. Navigate to Additional functions → About smartLink DTM ...

₩ ₩	Connect Disconnect	
© ₽	Load from device Store to device	
	Parameter Measured value Simulation Diagnosis Display channels Channels Topology Scan Diagnostic Scan Up-/Download-Manager Print	
	Additional functions	Compare offline
٩	Add device	Compare online
	Exchange device	Set value
<u>.</u>	Delete device	Audit trail
	Properties <smartlink hart="" hw-dp="">smartLink HW-DP HART</smartlink>	Scan list Edit channel assignments Set channel count of new smartLink nodes Troubleshooting

Write device data to file

5.9.2 Documentation of access parameters

With this function you can generate the documentation of the smartLink bus configuration. This function is available for all users. When you select this function, the documentation is displayed according to the frame application used.

- 1. Right-click a smartLink HART node in the project view.
- 2. Navigate to Additional functions ...



5.9.3 Troubleshooting

1. Select Additional Functions → Troubleshooting → Start Tracing.



2. Select Additional Functions → Troubleshooting → Stop Tracing.



These functions start or stop the tracing of smartLink DTM. When tracing is enabled, the program flow within smartLink DTM and detected error states are written to files. Although this information cannot be easily interpreted by those using smartLink DTM, it is a valuable tool helping Softing Support to detect an error.

If you would like Softing Support to assist you in cases of inexplicable/erroneous behavior, you can help us diagnose the errors by carrying out the following steps in advance.

- Start the tracing with the Start tracing function.
- Repeat the error.
- Stop tracing as soon as possible after the error has occurred using the Stop tracing function.

After performing these steps, you will find the file *smartLinkDTM.trc* in the following directory:

<User directory>\<username>\AppData\Local\Softing\SMARTLINKdtm\Trace

Furthermore, locate file *siadtmbe130.trc* in the following directory:

<User directory>\<username>\AppData\Local\Softing\DTMToolkit\Trace

Please email these files to Softing Support (<u>support.automation@softing.com</u>). If you require telephone support, please let us know that you have already created .trc files using the tracing function.

5.9.4 Audit trail

With this function your can start and stop logging audit trail events generated by smartLink DTM. To use this function, you must have the **Planning Engineer** or **Administrator** user role.

Start Audit Trail

1. Right-click a smartLink node in the project view..

2. Select Additional functions → Audit Trail → Start Audit Trail.



Stop Audit Trail

•	Start Audit Trail
	Stop Audit Trail
s	► S

Select Additional functions → Audit Trail → Stop Audit Trail.



Note

The Audit Trail feature needs to be supported by FDT frame application.

The Audit Trail setting is saved in the project folder of the FDT frame application. The setting currently chosen when saving the project is restored when the project is reloaded

smartLink DTM generates audit trail events in the following situations:

- Starting the DTM instance.
- Exiting the DTM instance.
- Prompting for connection.
- Prompting for disconnection.
- Successful connection establishment.
- Failed connection establishment (e.g. due to a communication fault).
- Disconnection on request.
- Disconnection triggered by a communication fault.
- Connection re-establishment after a communication fault has ceased.
- Changing of the smartLink access parameters.

6 Troubleshooting

In some frame applications, the window content may be updated incorrectly or not at all when user interfaces are opened or when switching between user interfaces. An error-free update can then usually be triggered by a slight change in the window size.

smartLink DTM communicates with the smartLink via TCP ports 443 (SSL) and 5094 (HART IP) by default. Please make sure that these ports are not blocked by a firewall. The HART IP port 5094 can be changed in the user interface for bus configuration. The changed port number must also be entered in the web interface of the smartLink as an alternate port. Refer to the smartLink operating manual for more information.

Check the following if the smartLink DTM fails to establish a connection to the smartLink:

- IP address of the smartLink is entered in the bus configuration.
- smartLink can be reached via IP. To test this, execute the ping command on the command line with the IP address of the smartLink.
- TCP port 443 and TCP port 5094 (or the TCP port set in the bus configuration for HART IP) are not blocked by a firewall.
- HART IP port that has been changed in the bus configuration is also entered in the smartLink as an alternate port. Refer to the smartLink user guide.
- Login data of a user set up in the smartLink is entered in the bus configuration.
- HART IP server is activated in the smartLink. Refer to the smartLink operating manual.

If the error message A *Remote I/O channel has not been configured for the DTM channel* is displayed during the connection setup of a Device DTM, Remote I/O channel for the DTM channel, to which the Device DTM was added, must still be assigned in the user interface as described in Section **Channel Assignment**.

The long tags of the HART devices displayed in the **Edit channel assignments...** user interface, which are entered by the smartLink when reading the channel assignments, are neither continuously updated nor saved in the project. They are only used for simple identification of a HART device during channel assignment.

Softing Industrial Automation GmbH

Richard-Reitzner-Allee 6 85540 Haar / Germany https://industrial.softing.com

+ 49 89 45 656-340
 info.automation@softing.com

