SOFTING LIBRARY

Technology: PROFIBUS

Product: PROFIusb

Topic: How-To

Use Softing's PROFIusb with PACTware™ for configuring PROFIBUS PA Devices

PACTware™

Products Concerned:

- PROFIusb — Softing's USB Interface to access PROFIBUS networks
- PROFIdtm — Communication Device Type Manager (commDTM) for Softing's PROFIBUS Interface Cards
- PACTware — Vendor and Fieldbus independent FDT Container Software

Purpose of this Document

The purpose of this document is to describe how-to integrate and use Softing's PROFIusb interface card with PACTware.

Assumptions / Preconditions

It is assumed that the reader of this document is familiar with (a) PROFIBUS technology and the capabilities of available field devices and (b) with the FDT container software PACTware.

Introduction

FDT is an open technology that enables users to easily access and extract intelligent information from their automation products. Depending on the actual installation FDT technology requires three, maximum four types of components.

- FDT Container Application — A Windows application that represents the user interface. The container application relies on CommDTM's to access the communication layer and invokes vendor specific DeviceDTM's to operate field devices.
- CommDTM — A commDTM represents communication devices like PC communication cards, couplers, gateways, and linking devices. Provided by the interface card manufacturer.
- GatewayDTM — GatewayDTMs are required if transitions between different network protocols exist. A gatewayDTM goes into action between the communication DTM and the device DTM..
- DeviceDTM — In a comparison the DeviceDTM corresponds to the printer driver. It is used in different systems in the same way. Provided by the device manufacturer

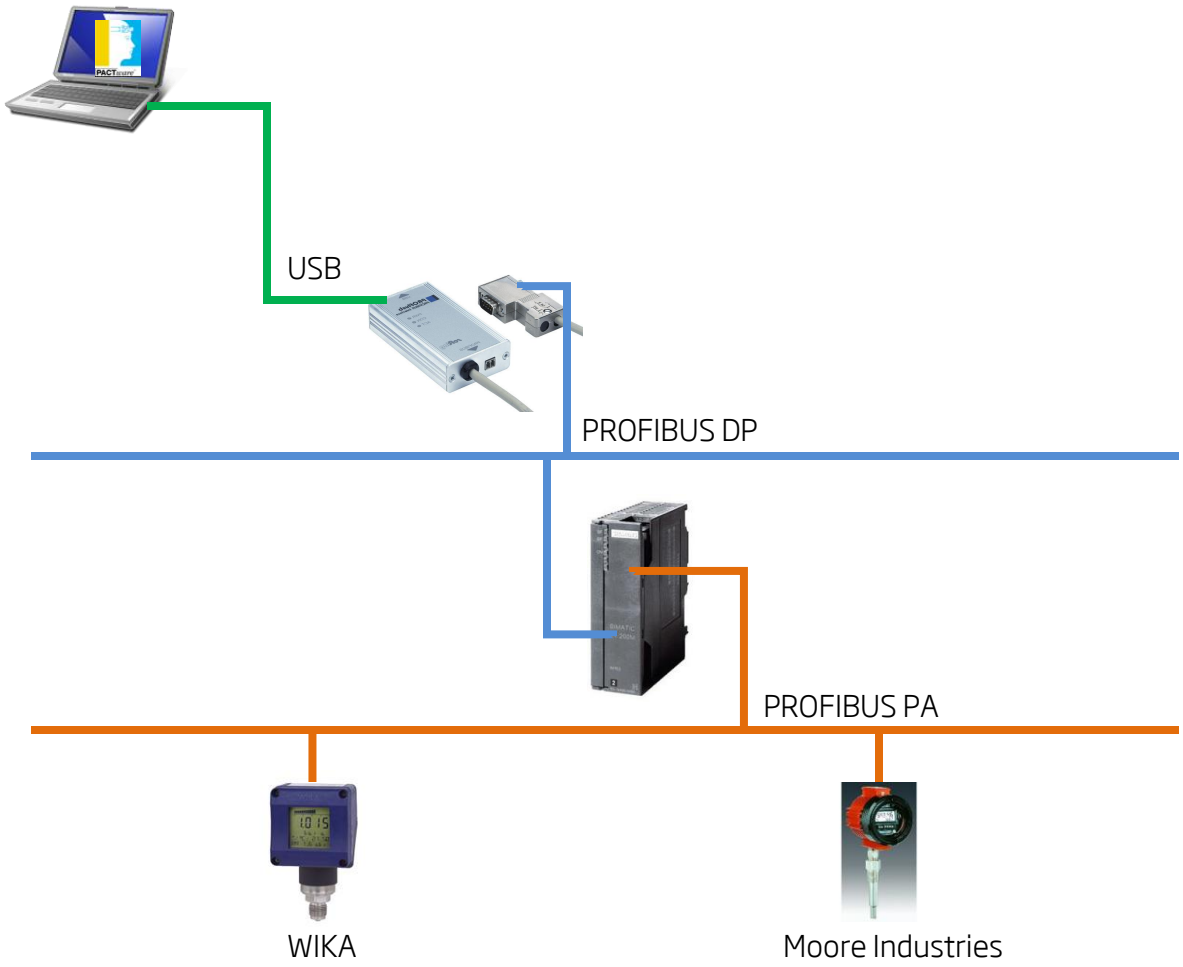
For more information on FDT technology please visit www.fdtgroup.org

Environment

The example environment consists of

- Computer running Windows 7 SP1 32-bits
- PACTware Version 4.0
- PROFIusb interface card
- Two PROFIBUS PA field devices
- Siemens DP/PA coupler

Network Diagram



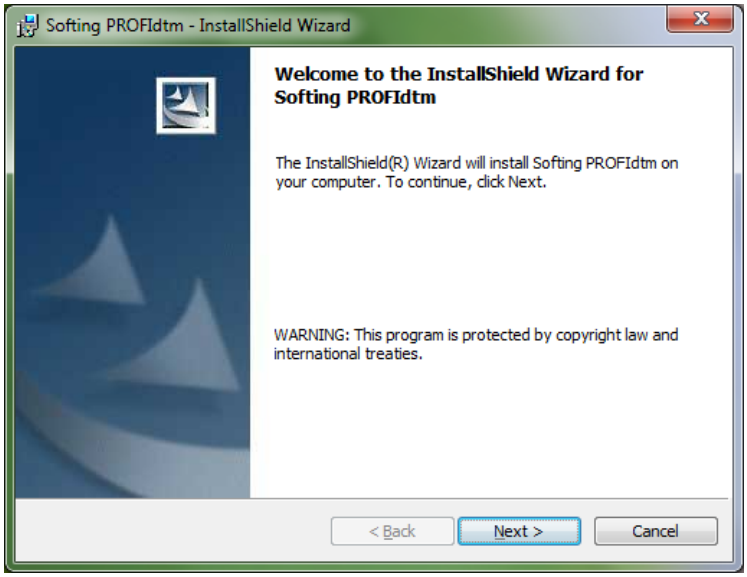
Software Installation

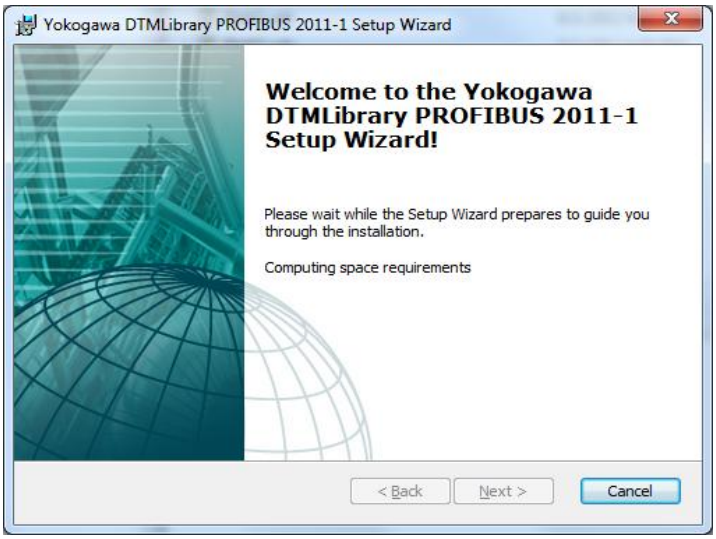
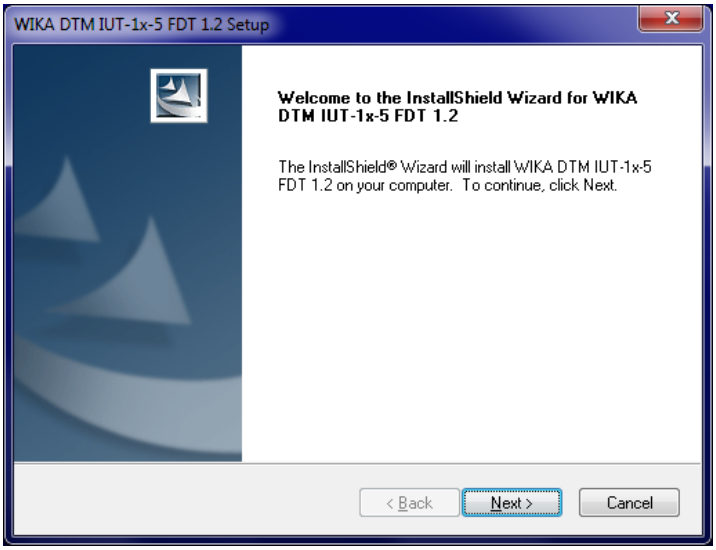
First install all components that make up the system.

Step	Action
1.a	Locate the software CD included with the PROFIusb interface card and install the hardware driver. Depending on your version of Windows you might have to answer a few security questions. In our case, the driver for the 32-bit version of Windows 7 is installed.

Version	Operating System	Installation	Manuals
5.45 (32-Bit)	Windows 7, Windows Vista, Windows XP and Windows 2000	Software Installation	User manual (Version 5.4)
5.45 (64-Bit)	Windows 7, Windows Vista and Windows XP	Software Installation	User manual (Version 5.4)
5.27 (32-Bit)	Window NT and Windows 9x/ME	Software Installation	User manual (Version 5.2)

1.b	Restart the computer
2.a	Locate or download the free-of-charge PROFIdtm from Softing. To download the PROFIdtm please follow the link below , click on "Downloads", and select "PROFIBUS CommDTM PROFIdtm Vx.yz Free of Charge": http://industrial.softing.com/en/products/functionality/interface-cards-gateways/usb-interface-cards/profibus/profibus-master-single-channel-usb-interface-card.html

2.b	Install the PROFIdtm 
3	Download and install PACTware (FDT frame application). You can download PACTware, for example, from http://www.pepperl-fuchs.us/usa/en/classid_162.htm PACTware™

4	Locate or download the required deviceDTMs of all of your field devices and install them. Depending on your version of Windows you might have to answer a few security questions. Install Example 1: Yokogawa DTM library for PROFIBUS devices  Install Example 2: Single deviceDTM for a WIKA device 

Display Elements of the PROFIusb interface card

On the front of the PROFIusb are five LEDs (PWR (Power); CON; ACT) indicating the device and the communication status. The Table below shows the symbols used in this document for the various indications of the display elements (LED block).

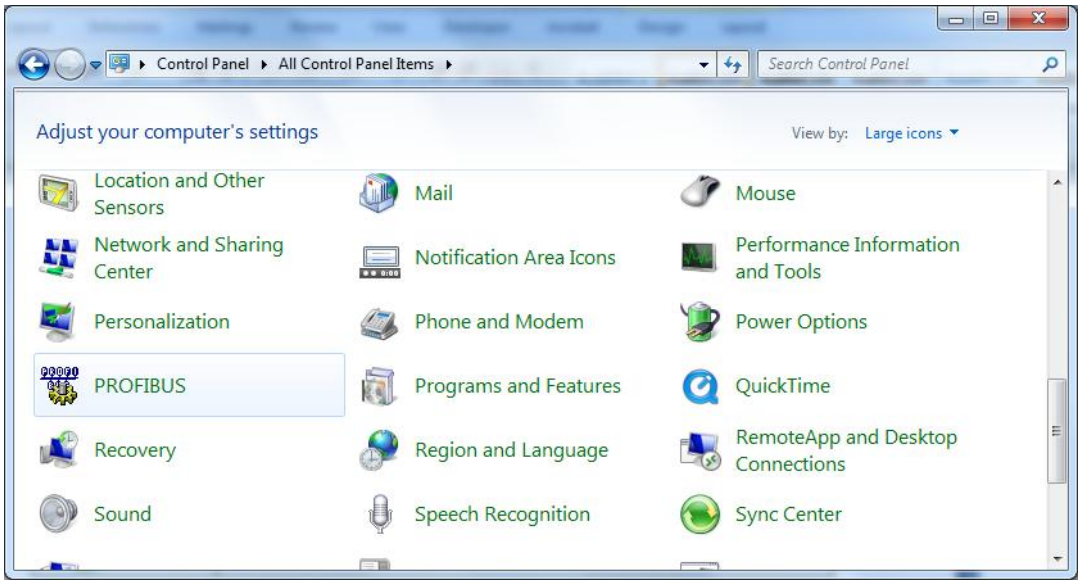
Symbol	Meaning for Display Element
	LED OFF
	LED Permanent
	LED Flashing

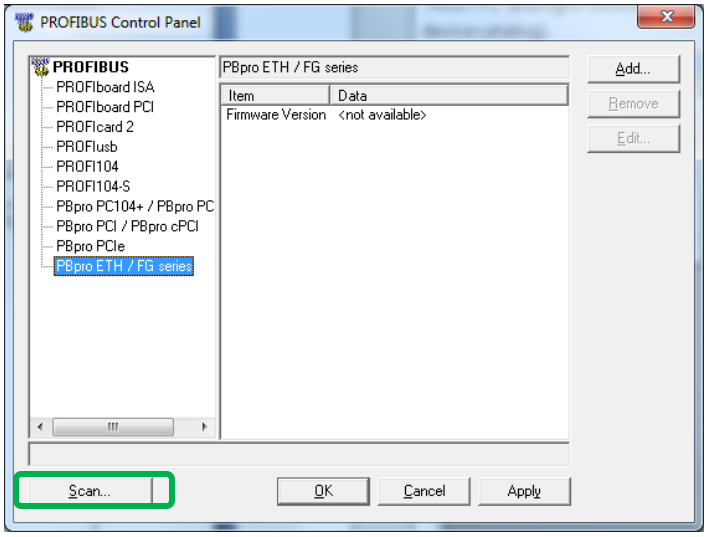
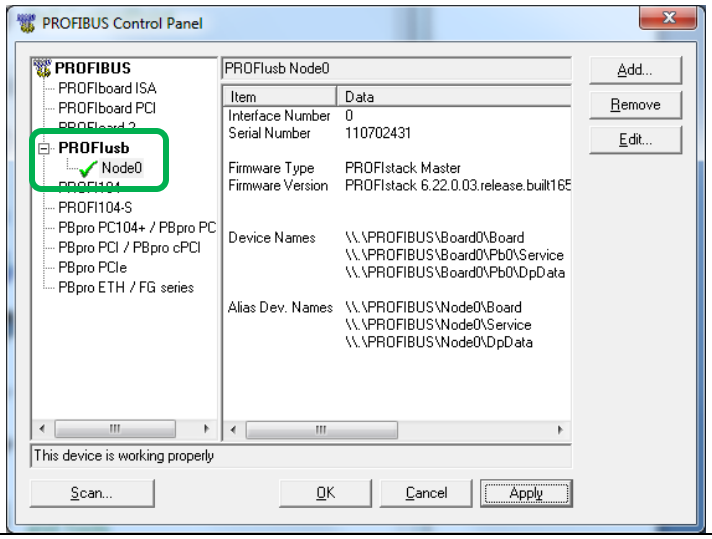
Display Element		Description
PWR (Power)		Power Indicator
	Off	No connection; No supply voltage is present.
	Green	Power is on (over USB or external power supply).
CON		Status of PROFIusb
	Green	USB cable is connected but card is not initialized by application
	Off	Card is initialized - no USB communication
	Green	Card is initialized – active USB communication
	Red	USB communication error (consult manual)
ACT		Status of PROFIBUS Master
	Off	PROFIBUS Master is not initialized
	Green	PROFIBUS Master is initialized – Master ready but not communicating
	Green	PROFIBUS Master is communicating
	Red	PROFIBUS communication error (consult manual)

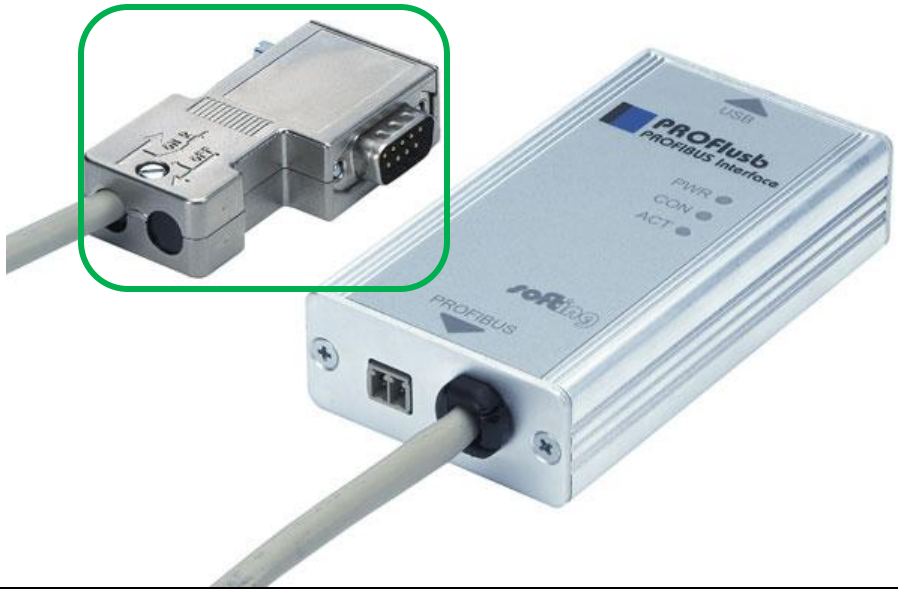
Connecting the PROFIusb

The following list the necessary steps to establish a link between a computer and the PROFIusb and to connect the PROFIusb to PROFIBUS.

Note: The PROFIusb is based on PROFIBUS DP as the physical layer. To access PROFIBUS PA devices a DP to PA coupler must be present in your network.

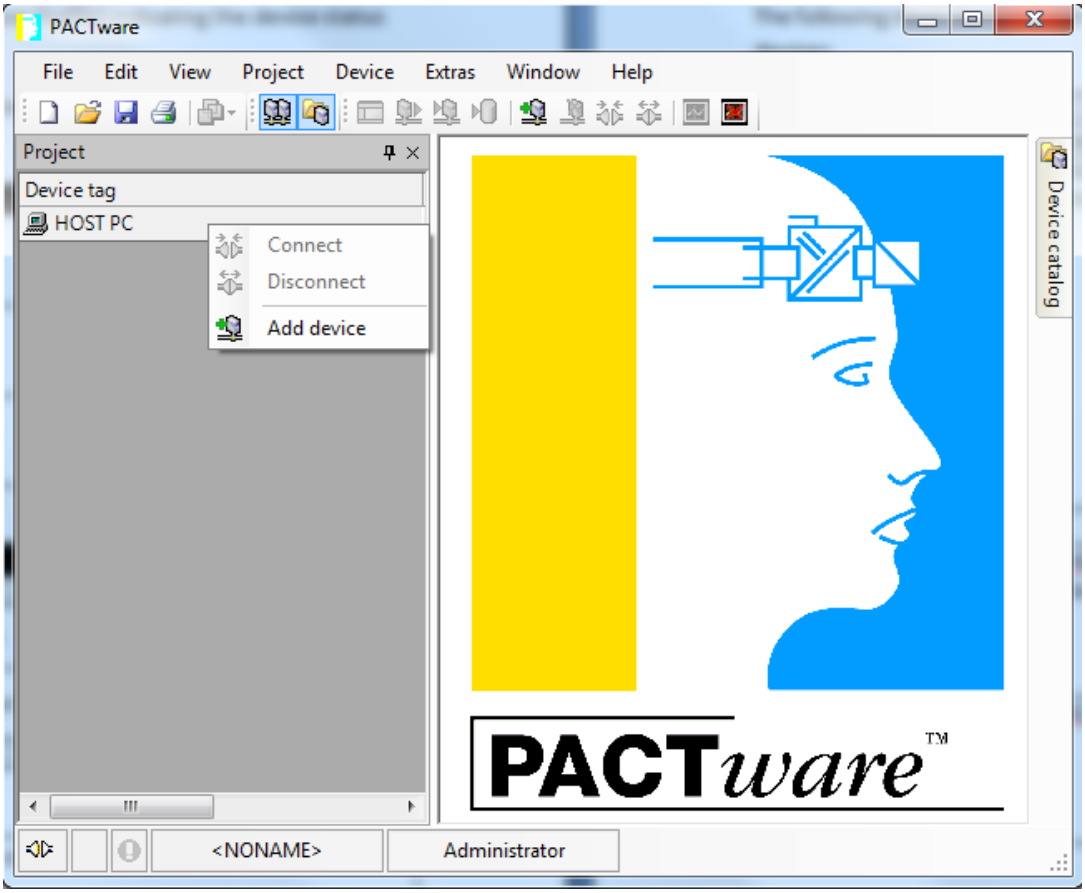
Step	Action
1	Connect the included USB cable to your computer and to the PROFIusb interface card.
2	Open the "Control Panel" located and open the item "PROFIBUS". Note: You might have to switch from the "Category" view to the "Icon" view to see this item. 

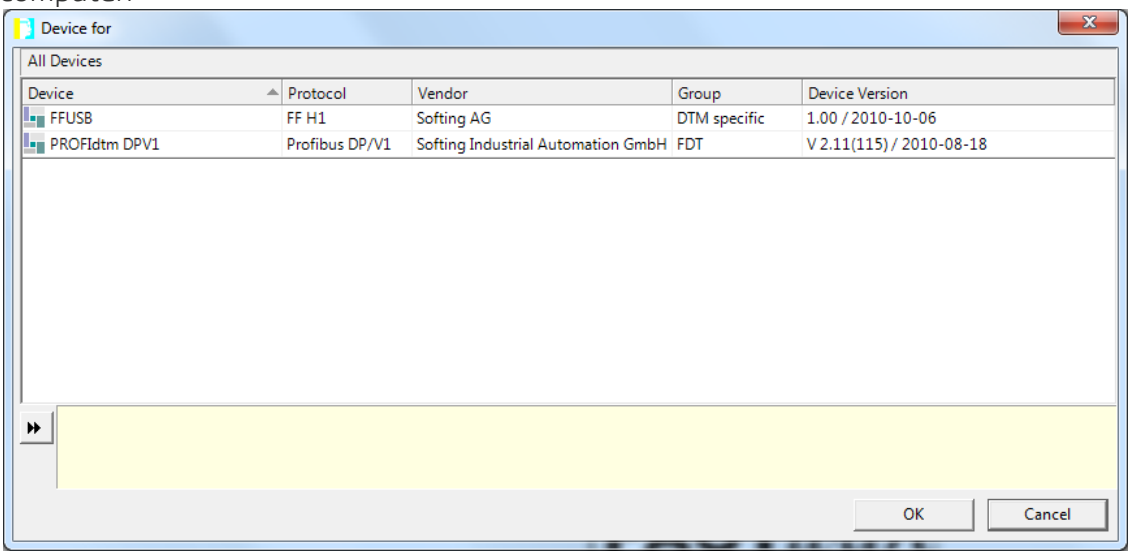
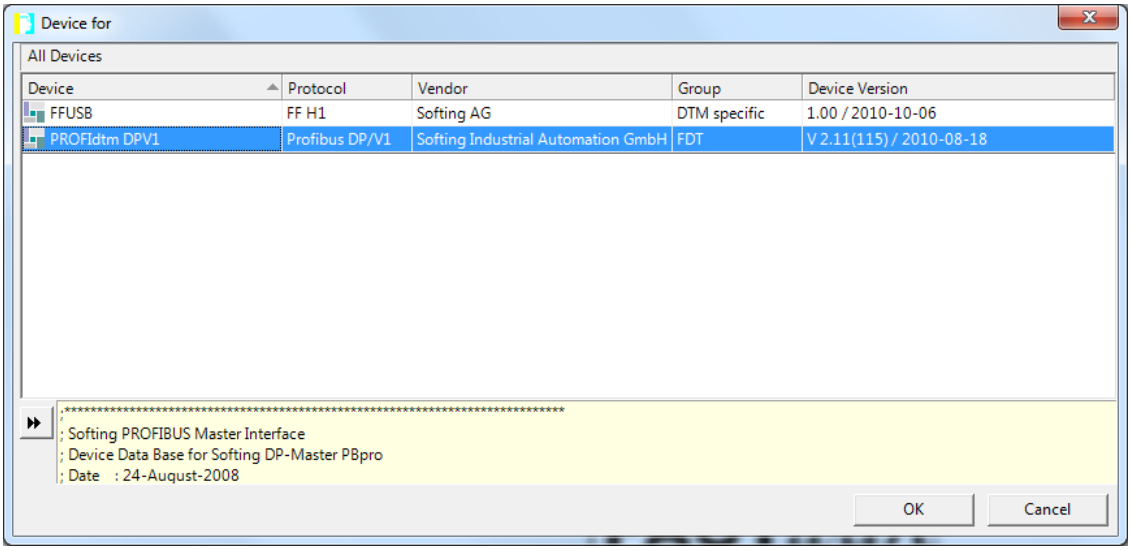
2.b	Click on "Scan.." 
2.c	A green check mark will appear to indicate that the driver has recognized the PROFIusb interface card. Click on "Apply" and/or "OK". 

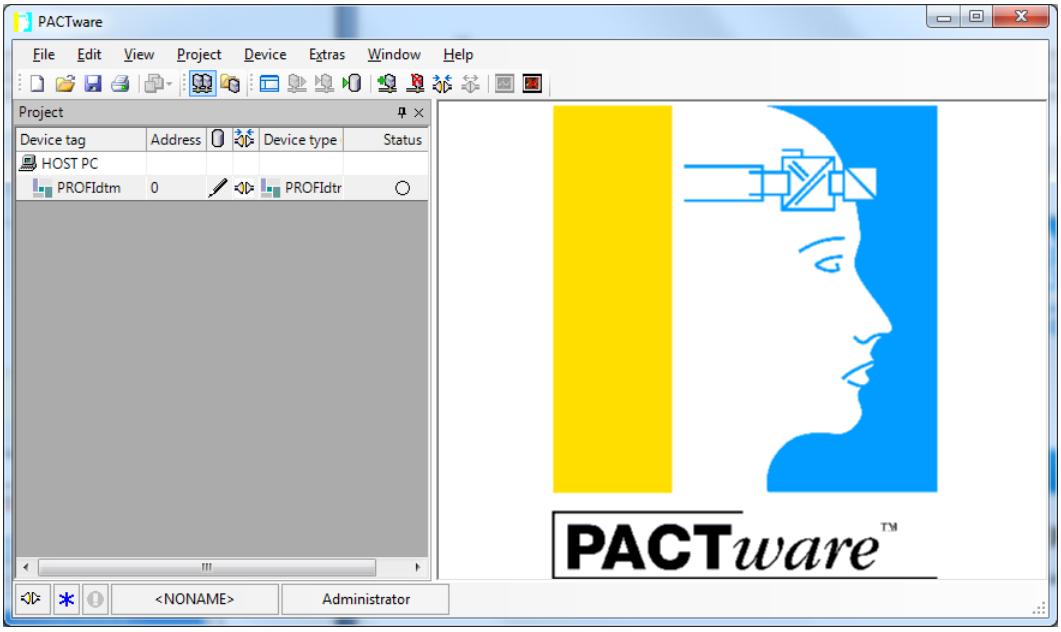
3	Use the standard 9-pin male PROFIBUS connector to connect the PROFIusb interace card to the PROFIBUS DP network. 

Selecting the PROFIusb Interface Card within PACTware

The following steps demonstrate how to use Softing's PROFIusb within PACTware to gain access to field devices.

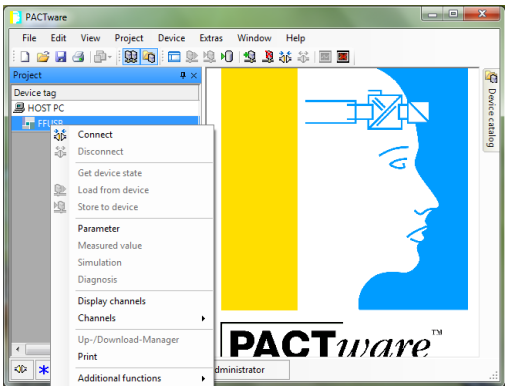
Step	Action
1	Start the FDT container application PACTware. Note: Open and update the PACTware "Device Catalog" if necessary.
2	First, you need to instantiate the commDTM. Hover with your mouse over the symbol "HOST PC" and right-click with your mouse (You can also use the F3 key to open the device catalog). 

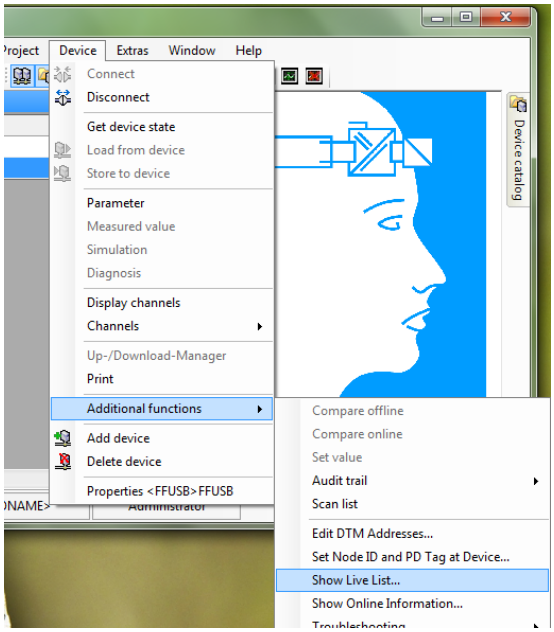
Step	Action
3	A left mouse-click on "Add device" displays the list of available commDTMs on your computer. 
4	Select the entry PROFIdtm and click on "OK". This is the commDTM for Softing's PROFIusb interface card. 

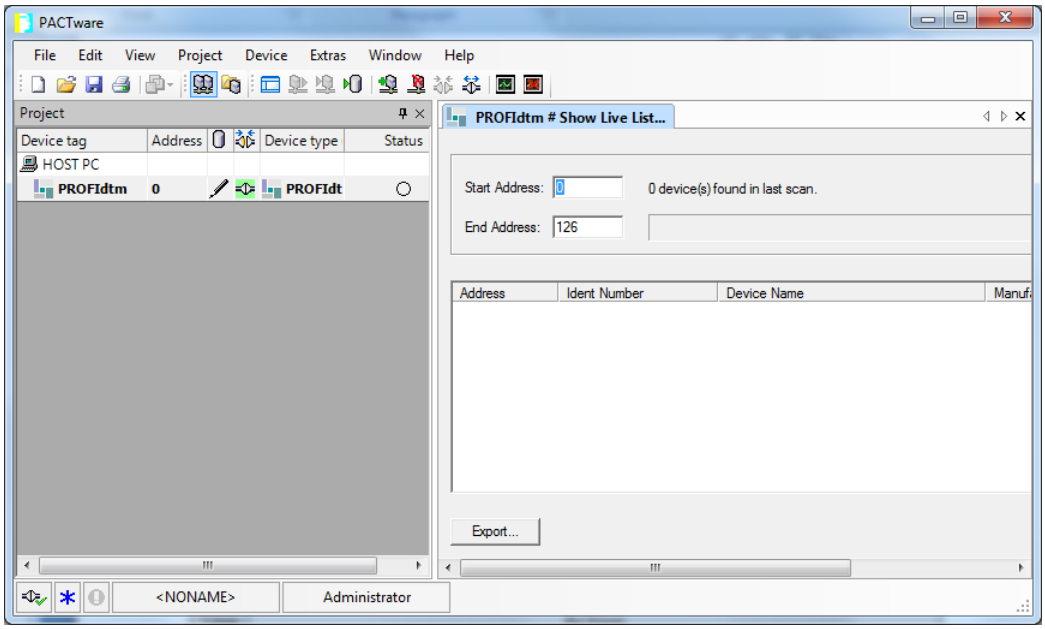
Step	Action
5	After few seconds a symbol representing the Softing commDTM will be added to the project. 

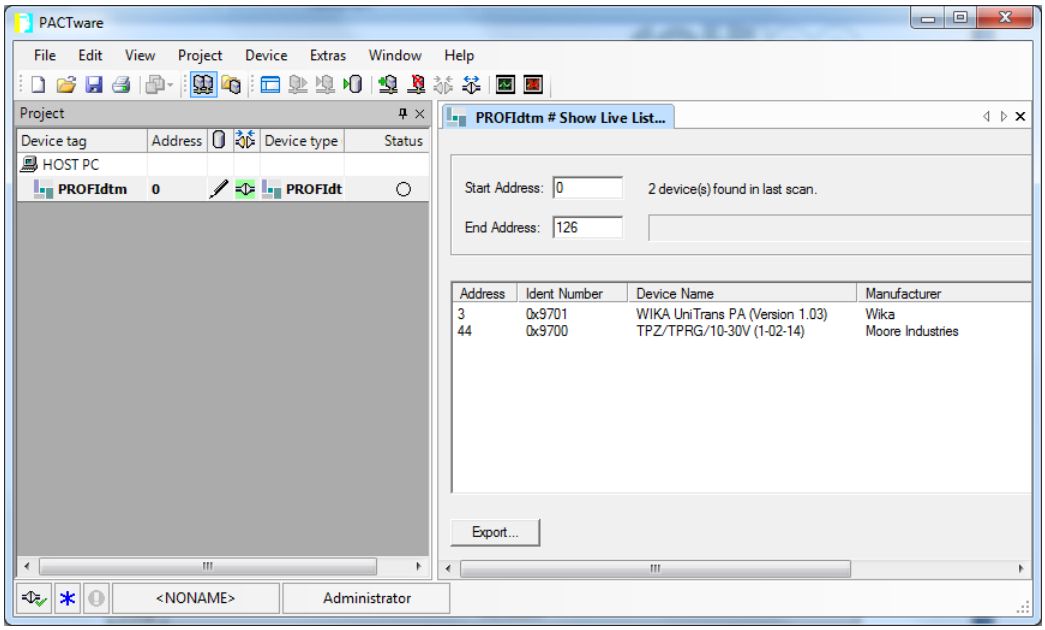
Testing the PROFIusb within PACTware

The following steps demonstrate how-to generate a live list of all connected PROFIBUS PA devices within PACTware.

Step	Action
1	Right click on the PROFIdtm symbol and select "Connect" or select the PROFIdtm symbol and use the menu entry "Device->Connect". 

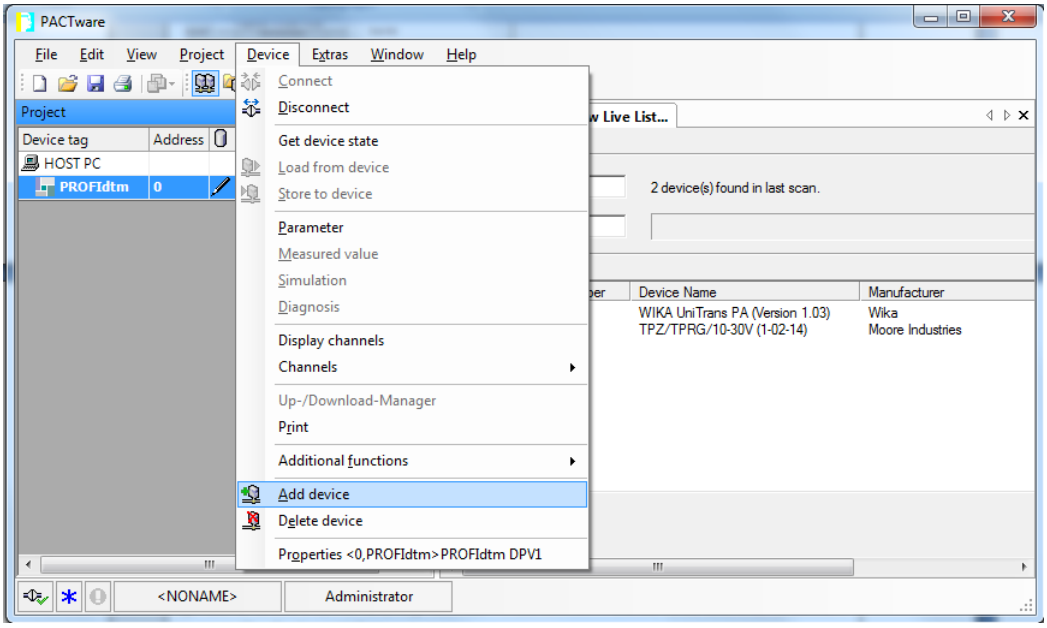
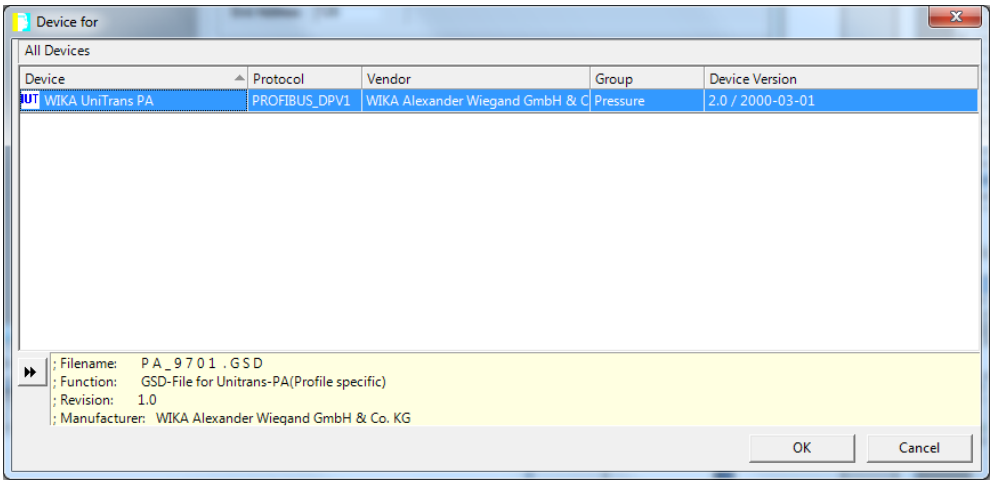
Step	Action
2	Right click on the PROFIdtm symbol and select "Additional Functions-> Show Live List..." or select the PROFIdtm symbol and use the menu entry "Device-> Additional Functions-> Show Live List..."  Please Note: The PROFIusb requires a DP to PA coupler to access PA devices. Please refer to the manual of the DP/PA coupler to configure the correct baud rate within the PROFIdtm. You can select the baud rate by (a) right-clicking on PROFIdtm symbol and selecting "Parameter" or under menu entry "Device->Parameter".

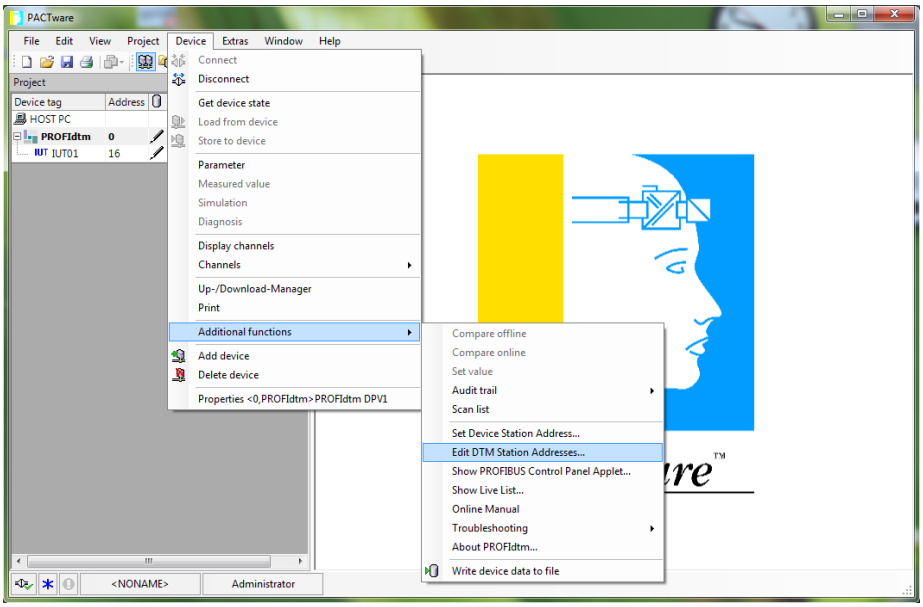
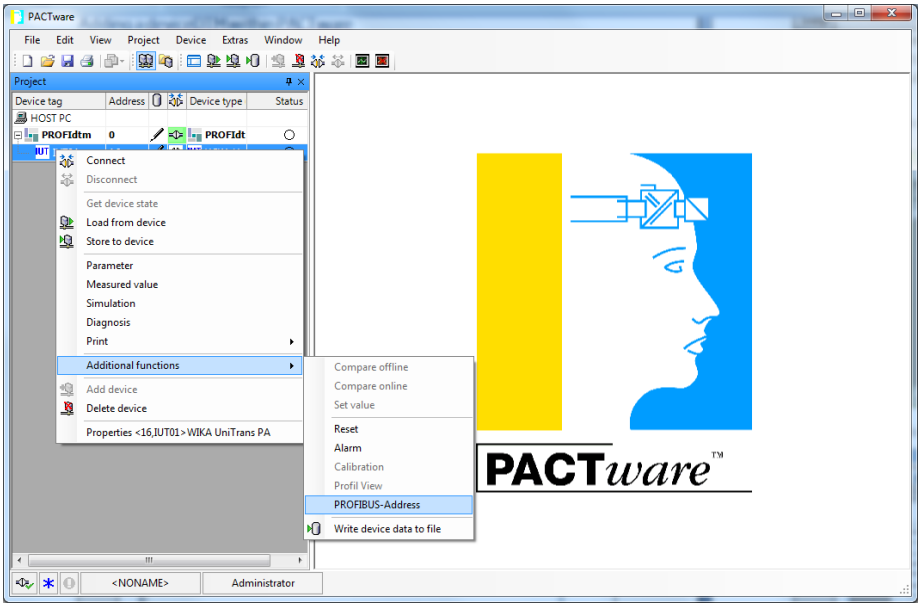
3	Click on the "Start Scan" Button on the right to start the process of creating the live list. 

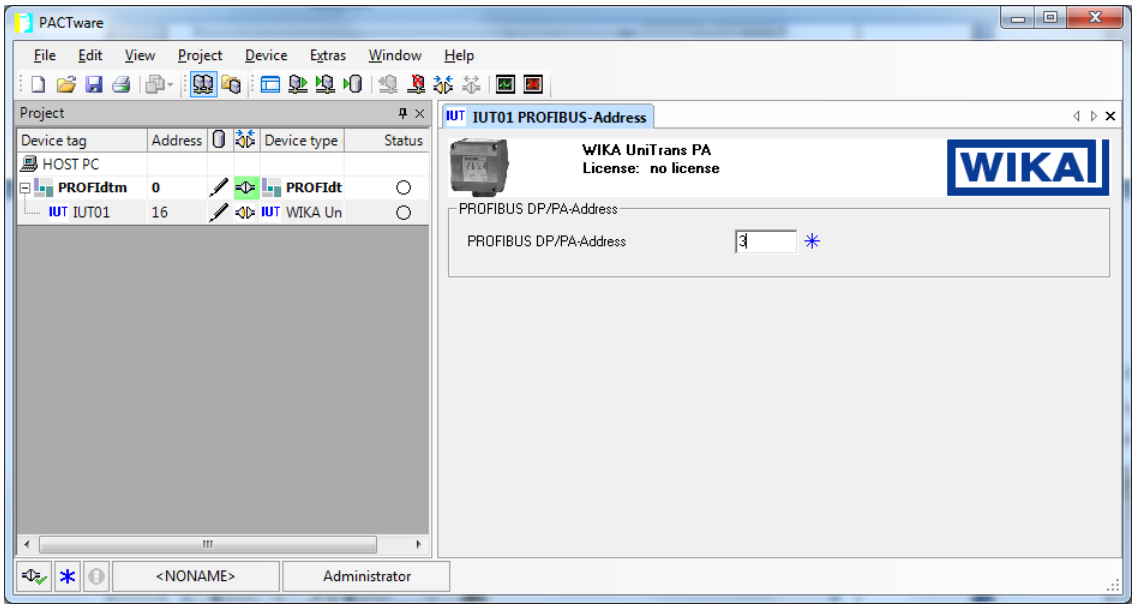
Step	Action
4	After a few minutes PACTware will display a list of all connected devices. Your PROFIdtm is working correctly with the PROFIusb interface card. 

Adding a deviceDTM within PACTware

The following steps demonstrate how to add and configure a deviceDTM. In this example we add a deviceDTM from WIKA.

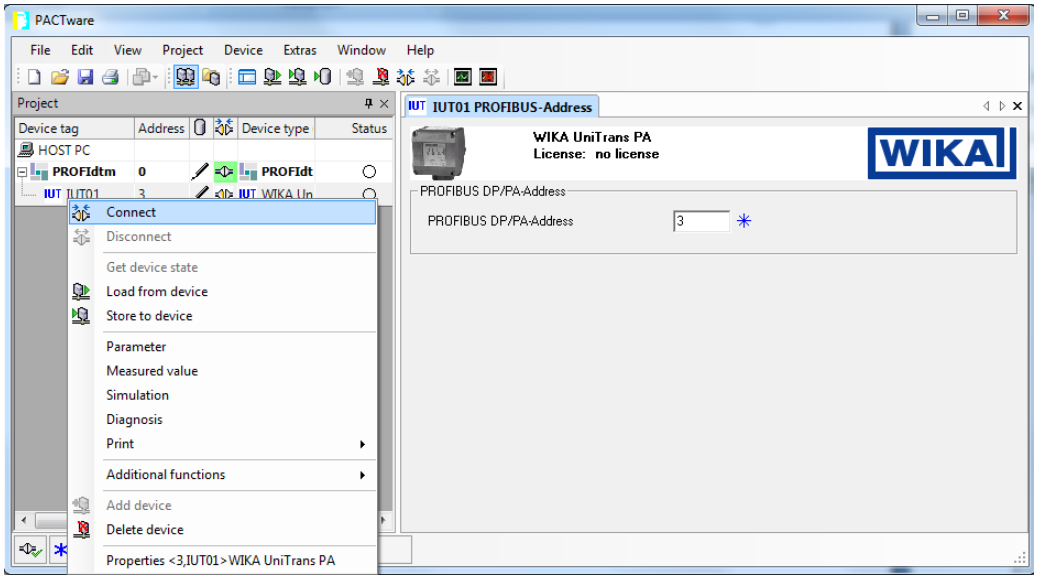
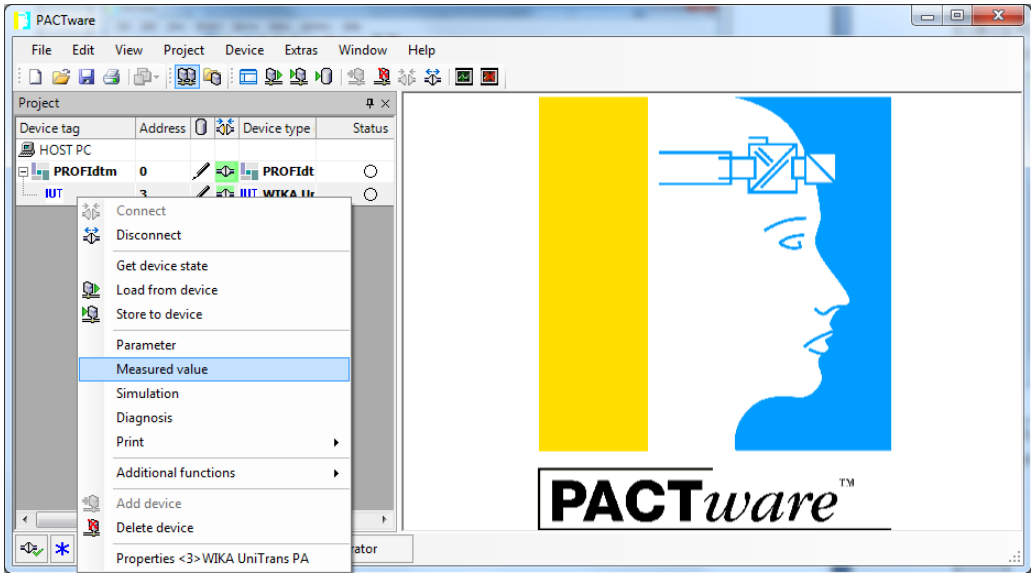
Step	Action
1	Right click on the PROFIdtm symbol and select "Add device" or select the PROFIdtm symbol and use the menu entry "Device->Add device". You can also use the F3 button to open the device catalog. 
2	Select the appropriate deviceDTM. For this example we select the WIKA deviceDTM for the WIKA pressure transmitter. 

Step	Action
3	Assign the field device address to the according deviceDTM. Please refer to the "Live List" for a list of all addresses used in your network. There are multiple methods to accomplish this configuration step. Here are two examples: 1. Right-click on the PROFIdtm symbol and select "Additional functions-> Edit DTM Addresses".  2. Right-click on the deviceDTM and select "Additional functions->PROFIBUS-Address" 

Step	Action
3	Edit the PROFIBUS Address to match the settings in the actual field device. Please refer to the "live list" for the correct address. 

Test the deviceDTM within PACTware

The following steps demonstrate how to use a deviceDTM of a specific PROFIBUS PA device to operate a field device within PACTware.

Step	Action
1	Right click on the deviceDTM symbol and select "Connect" or select the deviceDTM symbol and use the menu entry "Device->Connect". 
2	Right click on the deviceDTM symbol and select, for example, "Measured value" or select the deviceDTM symbol and use the menu entry "Device-> Measured value". 

Step	Action
3	If the deviceDTM is configured correctly the deviceDTM-specific "Measured value form" will be populated with actual data from the field device indicating that the deviceDTM is working correctly.