

**PACTware**

**Process Automation Configuration Tool**

**Edition 2.0 FDT 1.20**



## Copyright

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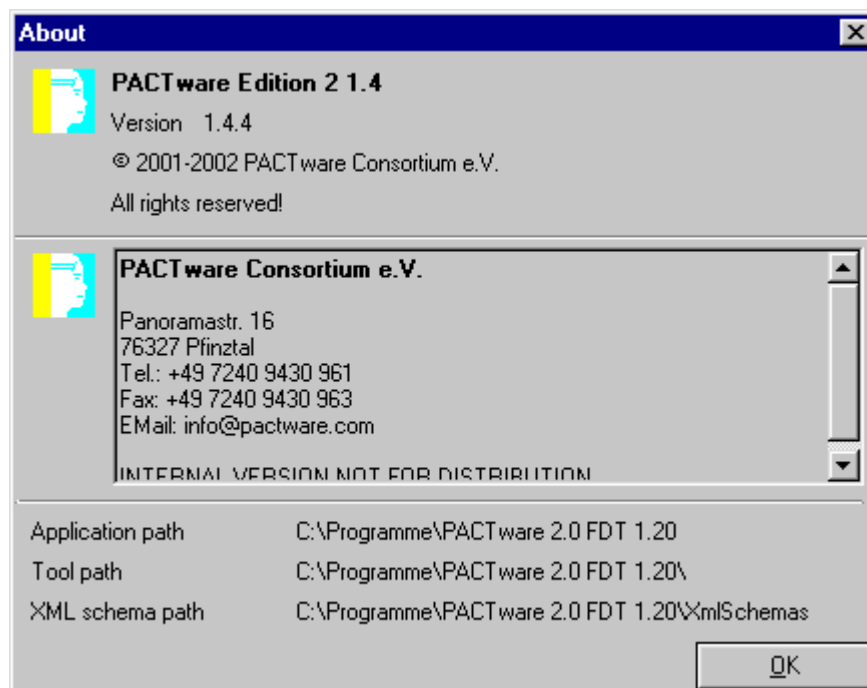
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## Enduser license

Please refer to the file **pweulaeng.txt** in the PACTware installation directory.

## Program release

The program release is shown using the item **About** in the **Help** menu. Example:



## Document history

Version:	1.0
Date:	17.07.2002

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## 1. Overview

PACTware (Process Automation Configuration Tool) is a program designed to combine communication-capable field devices of different manufacturers in projects.

In accordance with the FDT Specification 1.2 (Field Device Tool Specification) PACTware is used as a frame application for DTMs (Device Type Manager), which are provided by the field device manufacturers as configuration software.

Via ComDTM (Communication DTM) the communication with the field devices using protocols like e.g. the HART or Profibus Protocol is set up.

### 1.1 Software Requirements

PACTware runs under the operating systems Windows98, Windows NT 4.0 Service Pack 4 or later, Windows 2000 and WindowsXP.

Only one DTM can be opened at a time if Windows98 is used.

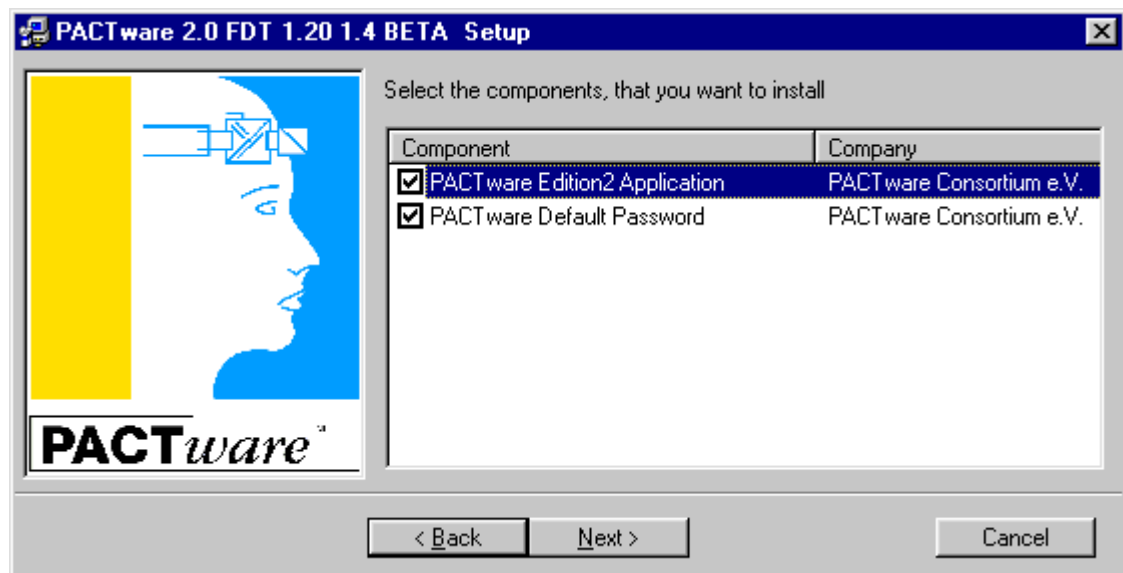
### 1.2 Hardware Requirements

PACTware requires 10 MByte hard disk memory, 5 MByte main memory. A computer with Pentium II 200 MHz processor or better, XGA Graphics and a Microsoft compatible mouse or an equivalent pointing device.

### 1.3 Install

Prior to installing PACTware to the computer, all running programs must be closed.

The installation is started by a double-click on Setup.exe. Following the selection of the installation language, a table with a selection of components to install is displayed. At least the application and the default password must be selected.



A program group for the current user will be inserted in the Windows Start menu.



## Overview

### 1.4 Start

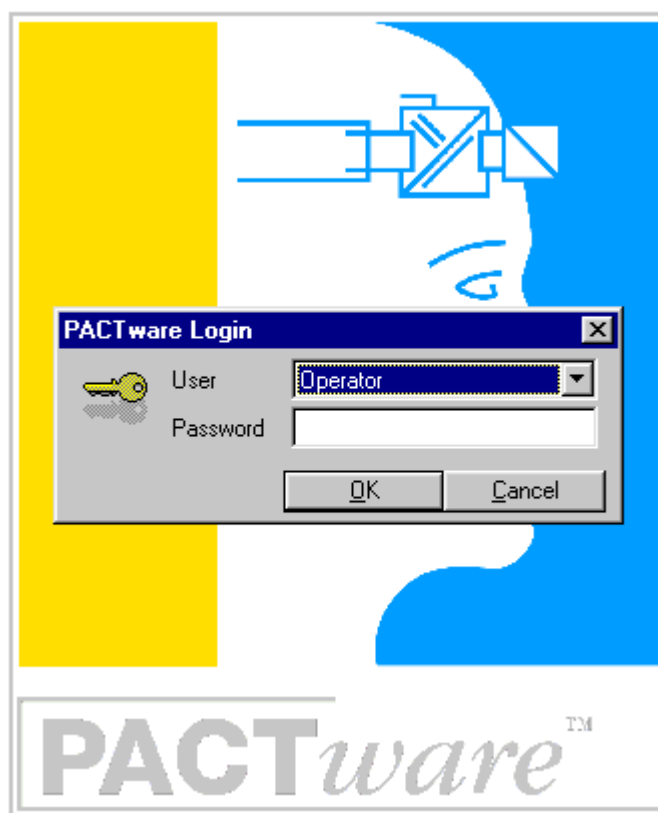
PACTware is always delivered together with at least one DTM. Prior to starting PACTware, the DTM with its setup program should also be installed.

Before the initial start of the program, a link can be placed on the desktop to simplify the program call. The following procedure can be executed:

Set up a link by calling the directory to which PACTware was installed (e.g. C:/Program Files/PACTware 2.0 FDT 1.20) by displaying the context menu of the program Pactware.exe via the right mouse key. The link is placed on the desktop by 'drag and drop'.

PACTware is either started by double-clicking the link or via the Windows Start menu by opening <Programs> in the installed program group with the entry PACTware 2.0 FDT 1.2.

When the program is started, a form is displayed to which the Administrator Password must be entered. The password is: manager.



It is recommended to change this password in menu item **Extras** - User Administration.

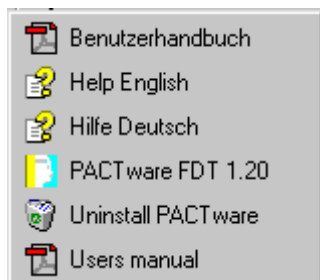
Before PACTware can be used, at least one DTM must be installed.



## Overview

### 1.5 Uninstall

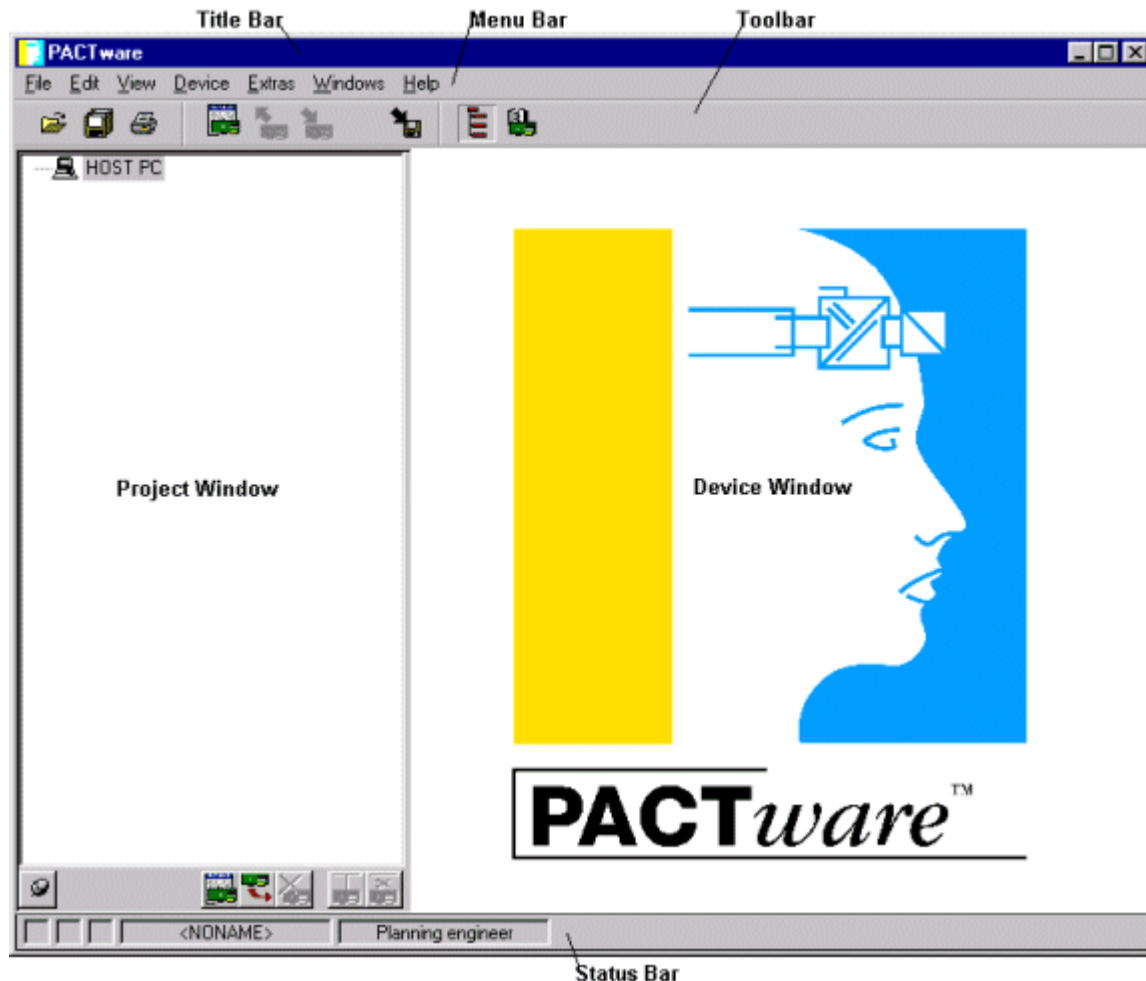
PACTware is uninstalled via the item **Uninstall PACTware** in the program group named PACTware 2.0 FDT 1.2.





## 2. Main Window

Following a successful login, PACTware displays the main window in which several components are combined.



### 2.1 Menu Bar

The menu bar contains pull-down menus to start all available program functions. The requested menu item is selected via the mouse or the associated key combination (SHIFT-ALT-<Letter>).

File Edit View Device Extras Windows Help

### 2.2 Toolbar

Frequently used commands of the menu list are contained in the toolbar.



The symbols have the following meaning (from left to right):



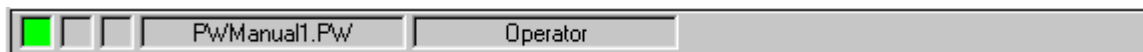
## Main Window

- Open project
- Save project
- Print project
- Edit parameters of the selected field device
- Upload parameters from the field device
- Download parameters to the field device
- Write parameters of the **DTM** to the file
- Open/close project window
- Open/close device catalogue

The form which is displayed via menu item Extras/Options is provided to define whether tooltips are added to the symbols.

## 2.3 Status Bar

The status bar contains information about the current status of the processed project. The displays have the following meaning (from left to right):



- Connection with a **CommDTM** established
- Connection with a device established (**PACTware** interface, **FDT** non-conforming)
- Project was edited (identified by an asterisk)
- Name of the project
- Current user role

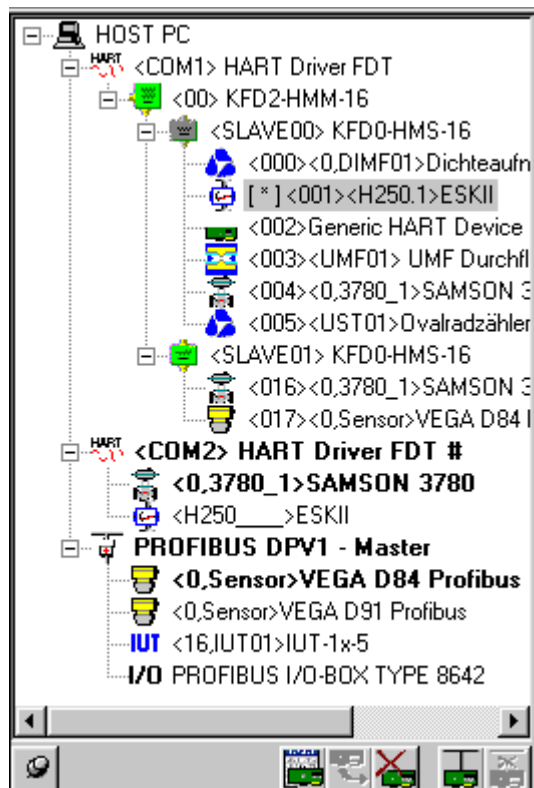




## Main Window

### 2.4 Project Window

The structure of the project with the **CommDTM** and field devices are displayed in the project window. The project structure is based on the Host PC to which one or several communication modules are connected. Field devices, remote I/O systems or multiplexers are assigned to the communication modules. The lowest level of the hierarchical project structure contains the field devices.



The **DTM**-Name of a project is preceded by a designation (called Tag written in <> brackets). The display of the DTM-name characterizes the current processing status of the DTM:

- a selected DTM is displayed in blue color
- a processed DTM is displayed in gray color
- a DTM with an established connection is displayed in bold writing
- an asterisk [\*] preceding the name of a DTM characterizes a DTM with edited parameters

The bottom edge of the window contains several buttons which are activated when displayed in color. The buttons have the following meaning:



The project window is docked into the main window. One click on this button uncouples the window from the main window.



The project window is decoupled from the main window and can be positioned freely within the main window.



The DTM can be opened to edit the device data.



## Main Window



An additional device-DTM can be added to the project tree underneath the selected DTM.



The DTM can be removed from the project structure.



The DTM can be connected with the device.

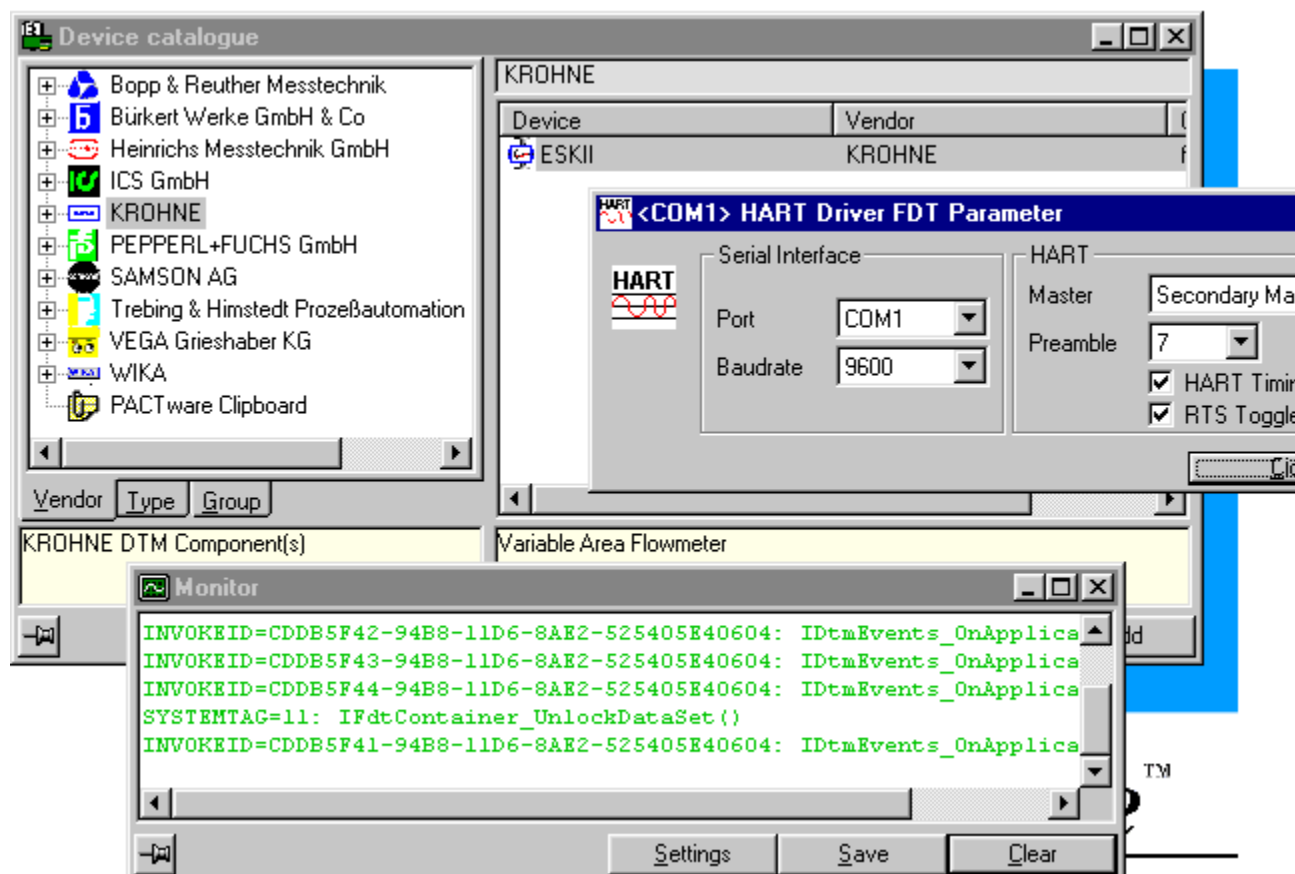


The DTM can be disconnected.

## 2.5 Device Window

The device window displays different kinds of windows which are necessary to process the project:

- The device catalogue containing all DTMs installed on the PC.
- The monitor allowing to view the data exchange between the **DTM** and a field device.
- One or several windows associated to one or several DTMs currently being processed. Size and content of the windows are defined by each DTM.





## 3. Functions

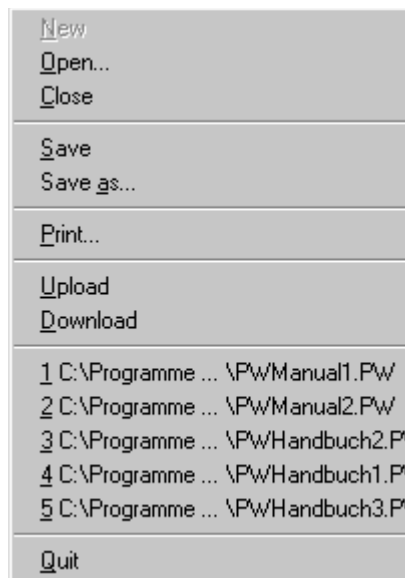
The functions of **PACTware** refer to project engineering, the parameterization and the work with field devices as well as the program settings itself.

### 3.1 Menus

The menus were designed in accordance with the **DTM** Styleguide (PNO guideline 2.172) and combine all **PACTware** functions in groups..

File Edit View Device Extras Windows Help

#### 3.1.1 File



Menu **File** contains all functions concerning project processing

##### **New**

Generates a new project. The project window and the device window are empty. To generate a new project the user must at least possess **User Rights** of an operator.

##### **Open...**

Opens a project file. A form provided to define if a project file is opened exclusively is displayed via menu item **Extras/ Options**. Every user can open a project.

##### **Close**

Closes the currently edited project. When changes are not saved a dialogue window is displayed reminding the user to save the changes. Every user can close a project.

##### **Save**

Saves the current configuration of the project. For this function a user must at least possess **User Rights** of an operator.

##### **Save as...**

Saves the project file as a new name. For this function a user must at least possess **User Rights** of an operator.

##### **Print...**

Prints the project of a list. Every user can print a project.



## Functions

### Upload

The parameters of all field devices associated to the selected communication field device (e.g. Remote I/O System or HART-Multiplexer) are uploaded and applied to the project. A form which is displayed via menu item Extras/Options is provided to define whether structural data of the communication field device are read or not. For these functions a user must at least possess **User Rights** of an operator.

### Download

The parameters of all field devices which are associated to the selected field device (e.g. Remote I/O System or HART-Multiplexer) are downloaded from the project to the field devices. For these functions a user must at least possess **User Rights** of an operator.

### 1 C:\Programs...

The most recently edited projects are displayed in a list. The requested project may be directly selected from the list and opened.

### Quit

Terminates **PACTware**. When changes are not saved a dialogue window is displayed reminding the user to save the changes. Every user may terminate a project.

## 3.1.2 Edit



Functions for project editing are offered in menu **Edit**.

### Cut

Not implemented yet.

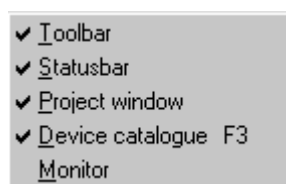
### Copy

The part of a project that has been connected to the selected **ComDTM** is copied to the **PACTware** Clipboard. For this function a user must at least possess **User Rights** of a planning engineer.

### Paste

Not implemented yet.

## 3.1.3 View



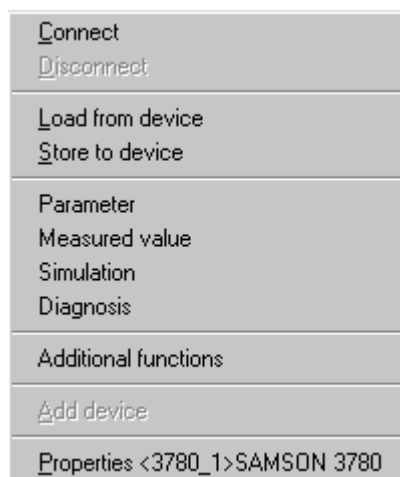
The **Toolbar**, the **Status Bar** and the **Project Window** can be displayed or hidden via menu **View**.

The **Device Catalogue** and the **Communication Monitor** can be activated and deactivated in the **Device Window**.



## Functions

### 3.1.4 Device Data



All functions, a **DTM** can execute with the field devices are combined in menu **Device Data**. The content of the menu corresponds to the context menu which can be activated for each **DTM** via the right mouse button.

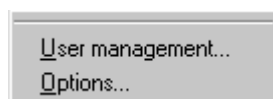
The first two groups of menu entries are offered by each DTM. The menu entries of the third group are offered by most of the DTMs. Functions which are not offered by the selected DTM are displayed in gray color.

Special functions of the selected DTM can be called via menu item **Additional Functions**. The content of the submenu depends entirely on the functions of the DTM.

An additional device can be added to the project structure via **Add Device**. A check verifies whether the selected DTM could be connected to a communication field device or a communication module. To execute this function a user must at least possess **User Rights** of an operator.

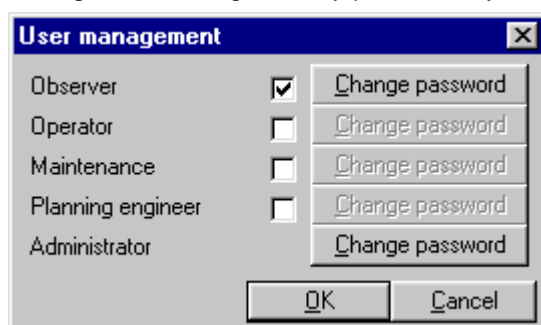
The last menu item displays a form containing information about the selected DTM and the field device. The information is entered to the project database.

### 3.1.5 Extras



Program settings for **PACTware** are entered to menu **Extras**. The settings are saved when the program is terminated and are active at the next program start.

Passwords for the user groups are assigned in the user **User Management**. Changes in the User Management Dialog are only permitted by the Administrator.



The privileges of each user group is defined in the **User Rights** table in the glossary.



## Functions

Key **Change Password** calls a form to which the new password is entered. The password must be confirmed in the second line again to rule out spelling mistakes.

The 'Observer Password' dialog box has a title bar with a close button. It contains a key icon, a 'Password' label with a text input field, a 'Confirm password' label with a text input field, and 'OK' and 'Cancel' buttons at the bottom.

In the user management it is possible to activate up to 4 predefined user groups for a project. At the PACTware program start the user selects one of the user groups in the Login Form and enters the respective password.

The 'PACTware Login' dialog box has a title bar with a close button. It contains a key icon, a 'User' label with a dropdown menu showing 'Administrator', a 'Password' label with a text input field, and 'OK' and 'Cancel' buttons at the bottom.

The settings which are entered to the form **Options** are effective immediately. Every user can set the options.

The 'Options' dialog box has a title bar with a close button. It is divided into two main sections. The left section has a 'Sprache/Language' dropdown menu with 'English' selected, a checked 'Tooltips' checkbox, and an unchecked checkbox. The right section is titled 'Project' and contains four checkboxes: 'Restore last project on program start' (unchecked), 'Lock project files exclusiv' (checked), 'Load only structure information on upload' (checked), and 'Open parameter windows maximized' (unchecked). 'OK' and 'Cancel' buttons are at the bottom.

In the event that e.g. the language is changed, texts in the requested language are displayed everywhere following the confirmation of the form via ok. This also applies to the user interface of the DTM as far as the selected language is supported by the DTM.

The help texts (called Tooltips) are displayed in the user interface wherever help text is provided.

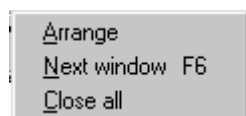
The following default settings can be defined for project processing:

- The most recently edited project can be opened following the program start.
- When changing project data conflicts may arise when several users process one project. These conflicts are avoided by exclusively opening the project.
- To reduce the loading times it is recommended to load only the structural information when uploading a part of a system, e.g. that is provided by a multiplexer. This procedure does not load the parameters of the connected field devices.
- The device windows are opened in maximized form. Thus showing only one window at a time.



## Functions

### 3.1.6 Window



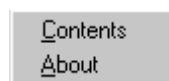
Menu **Window** supports processing the **DTM** windows in the device window.

The DTM-windows can be cascaded so a certain DTM-window can easily be found in a multitude of windows.

**Next window** switches from one DTM-window to the next and displays it in the foreground.

The device window is emptied by activating **Close all windows**.

### 3.1.7 Help



This documentation is called via the first menu item of the **Help** menu.

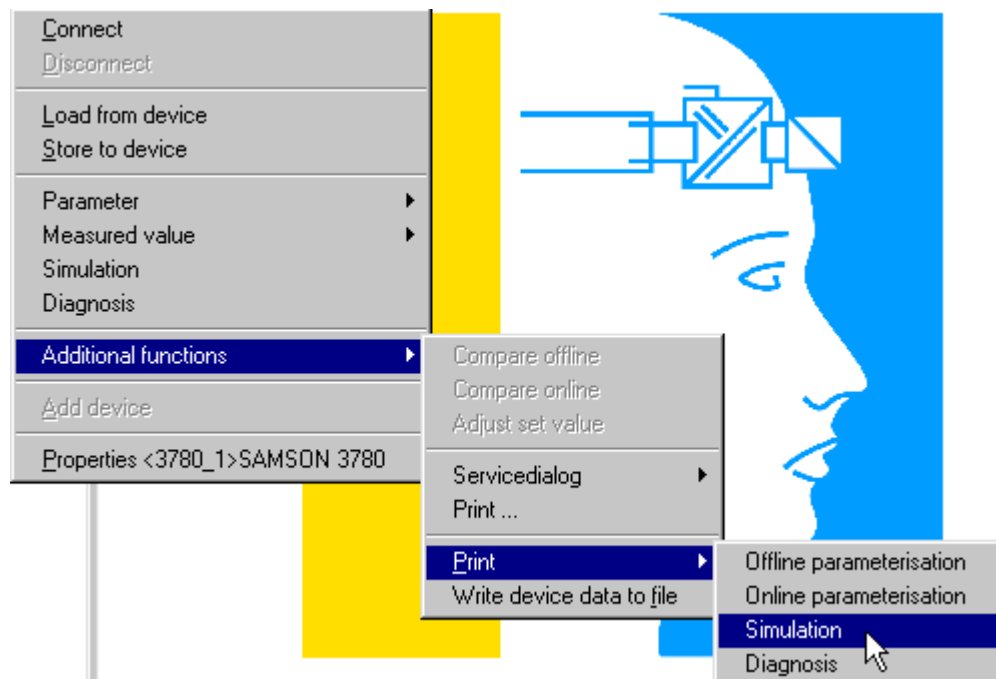
Information about the program version and the directory location of the **PACTware** program are started via the **Help - About** menu item.



## Functions

### 3.2 Context Menu

A context menu is provided in the project for each item. It consists of entries that are predefined by **PACTware** and entries defined by the individual **DTM**.

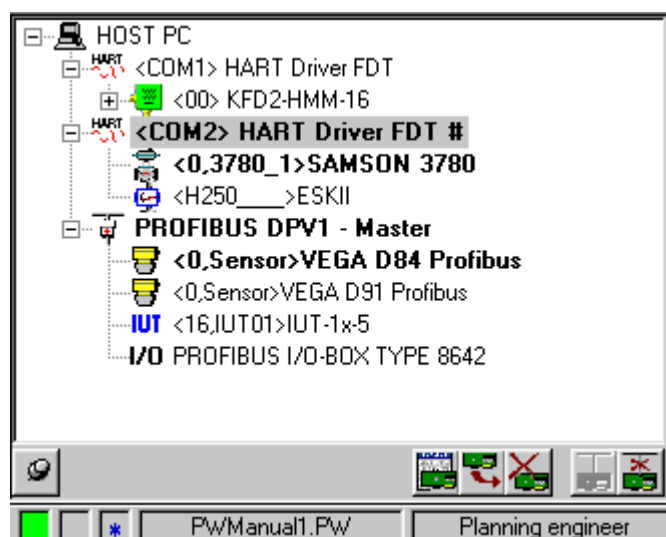


#### 3.2.1 Connection between DTM and device

The following two menu items are provided by each **DTM**.

##### Connect

Regardless of the communication protocol a connection setup is started between the DTM and the device. The project window displays all connected DTMs and the **ComDTM** in the project window in bold letters and the left box of the status line is displayed in green color.







## Functions

The connection is established when a device is physically connected. Otherwise an error message is displayed.



### Disconnect

After working with the device the connection can be disconnected again. The disconnection is executed automatically when **PACTware** is terminated.

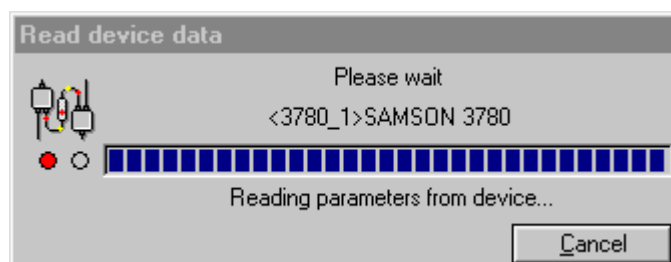
When the connection of a **ComDTM** is disconnected, the connections to all connected DTMs are simultaneously interrupted.

## 3.2.2 Data Exchange between DTM and Device

The following two menu items are provided by each **DTM**. A connection to the device must have been established before data can be uploaded from the device or downloaded to the device.

### Load from device

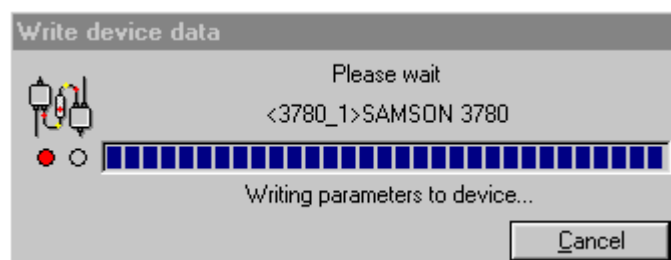
When the connection has been successfully set up, the DTM starts to upload data from the device. A message displays this progress.



The DTM defines the data that is uploaded from the device. Depending on the user group, different data can be read. Data that was successfully uploaded from the device can be displayed in the DTM window.

### Store to device

When the connection has been successfully set up, the DTM starts to download data to the device. A message displays this progress.



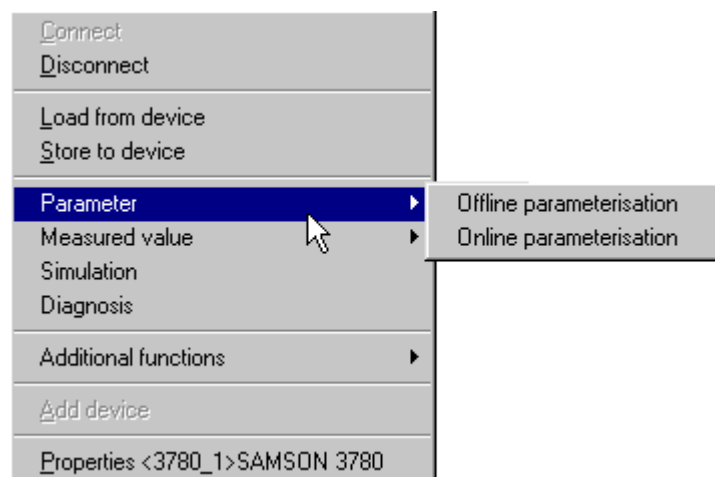


## Functions

The type of data written to the device are defined in the DTM. Different data can be written depending on the user group

### 3.2.3 Edit the device data via DTM

The first item of this group is offered by each **DTM**. The three remaining menu entries are only offered by the DTM when the field device possesses corresponding functions or when the DTM supports these functions.



The behavior of the described functions and the displayed dialogs are dependent from the DTM implementation.

#### Parameters

A distinction is made between **Offline Parameterization** and **Online Parameterization**. If a connection has been set up for the DTM, the online parameterization is automatically displayed otherwise the Offline Parameterization of the device is displayed.

In the offline parameterization all parameters of a device are projected, which can also be defined without a connected device. In this manner a project with all its devices can already be finished before the system start-up

The online parameterization changes parameters during the plant operation, e.g. to set up control parameters.

#### Measured Value

Measured values are either displayed via a scaled measured value display or as the run of the curve. The measured values may be updated in a cyclic manor by the DTM. The behavior and display is dependent of the DTM implementation.

#### Simulation

Simulation allows to test a field device during its operation. Given states are set up in the field device via DTM in order to detect e.g. malfunctions. A connection to the field device must be established.

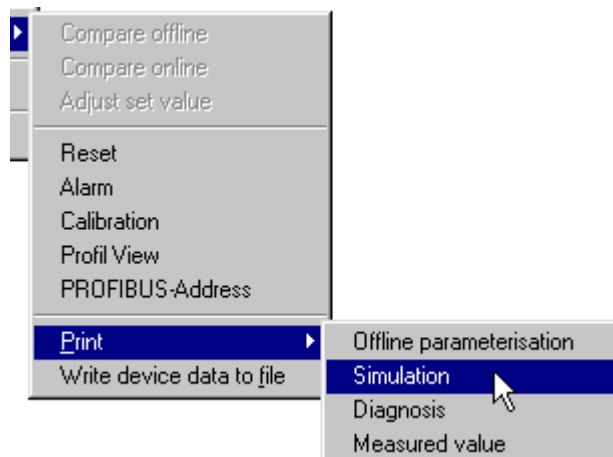
#### Diagnostics

Field devices often offer substantial information on their status. This information can be called and displayed via this menu item. A connection to the field device must be active.



### 3.2.4 Additional Functions

Menu item **Additional Functions** displays a submenu combining all functions which are offered device-specific or which are used less frequently. The submenu is divided into three groups.



The first group contains menu items which are provided for all **DTMs**:

**Compare offline**

Not implemented yet.

**Compare online**

Not implemented yet.

**Adjust set value**

Not implemented yet.

The second group contains all device-specific DTM functions.

The third group of menu items is obligatory for all DTMs.

**Print**

The predefined functions are printed in one copy each. The print form can be predefined in style sheets. The printing format is therefore individually defined by each DTM. The print is displayed in a preview window and can then be output on a printer.

**Write device data to file**

This function is provided to save changes to parameters which were made in the DTM.

### 3.2.5 Add device

This menu item is accessible when a DTM can be inserted at this position in the project structure and the corresponding **DTM** has been selected. The DTM may be a **ComDTM**, which performs a communication protocol or field devices like multiplexer or remote I/O-systems which communicate with connected field devices.



## Functions

### 3.2.6 Device properties

Every DTM provides information about itself and the device it can work with. 3 pages are offered in the window. The first page contains information on the project entry of the device.

The screenshot shows the 'Device info' tab of the '<3780\_1>SAMSON 3780 Properties' window. The window has three tabs: 'Device info', 'Description', and 'Version info'. The 'Device info' tab is active and contains the following fields:

Generated	24.05.02 19:33:59
Last change	24.05.02 19:35:08
Data source	File
Device	SAMSON 3780
Description	HART Positioner Type 3780 / HART Stellungsregler Typ 3780
Operation phase	project design

The second page contains a comment that is entered into the project database. This comment can be displayed on a printed copy of the project.

The third page contains information about the device and the DTM.

The screenshot shows the 'Version info' tab of the '<3780\_1>SAMSON 3780 Properties' window. The window has three tabs: 'Device info', 'Description', and 'Version info'. The 'Version info' tab is active and contains the following fields:

Device	SAMSON 3780
Vendor	SAMSON AG
Info	HART Positioner Type 3780 / HART Stellungsregler Typ 3780
Version	>= K2.12 /
DTM	SAMSON DTM 3780 FDT 1.2
Vendor	SAMSON AG
Version	0.9.15 / 23.04.02



## 4. Working with PACTware


**PACTware** is designed for the configuration and parameterization of field devices used in an automation system. PACTware allows to configure projects in which the structure of the automation system is reproduced.

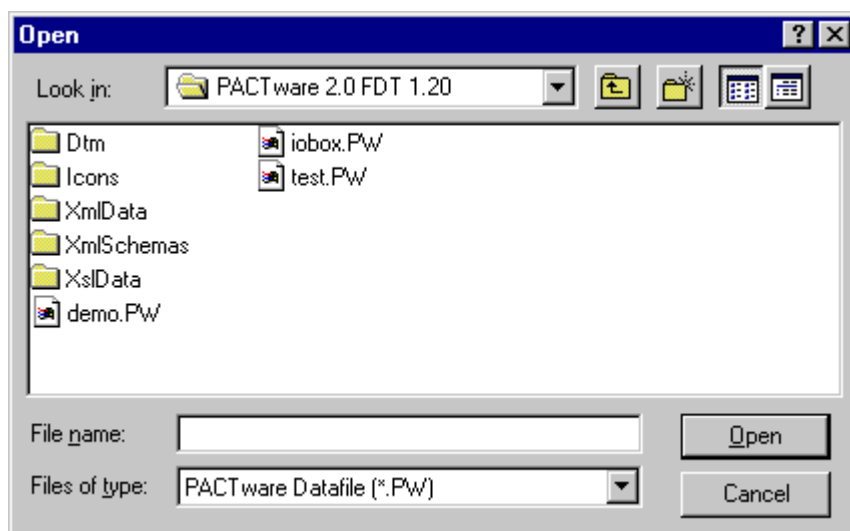
In the most simplest case only one field device is connected to a PC via a modem or via a bus coupler. Complex projects can comprise one or several different bus systems, connecting multiplexer or remote I/O systems with the PC. Field devices sensing the measured values from the process (sensors) or influencing the process sequence are connected to the multiplexer (actors).

As PACTware is a frame application according to the **FDT** Specification, **DTMs** of different manufacturers and bus systems offering **ComDTMs** can be combined in one project.

### 4.1 Generate/Open project

A new project is generated via item **New** in the **File** Menu. The project has no name and consists only of the HOST PC.

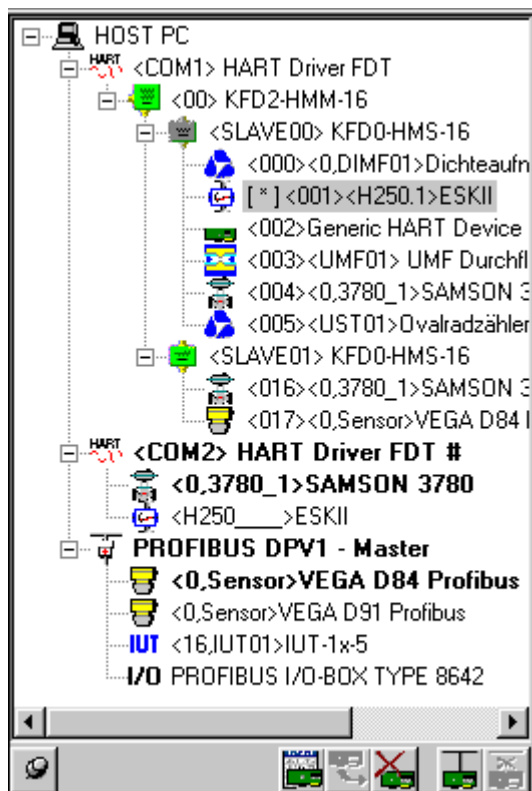
 An existing project is either opened via item **Open...** in the **File** Menu or via the adjacent tool symbol. The Open dialog is displayed showing the existing project files.





## Working with PACTware

The project structure is displayed in the project window. The name of the project is displayed in the status bar.





## 4.2 Device Catalogue

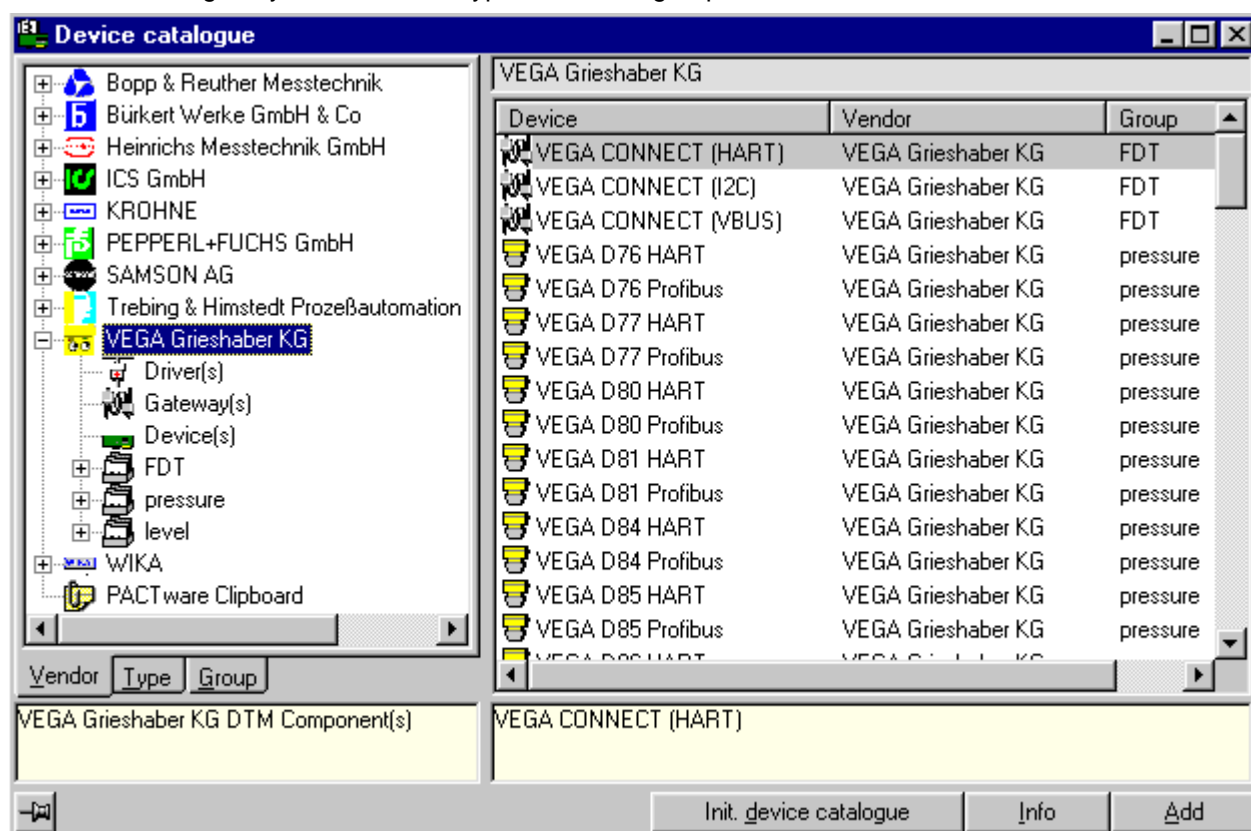
The device catalogue displays all **DTMs** provided for the configuration of a project. The device catalogue can be displayed as follows:

- using function key **F3**
- via item **Device catalogue** in menu **View**



- using the adjacent tool symbol

The device catalogue is displayed in a window showing an overview of all DTMs as a tree structure on the left side and the currently selected DTM-group on the right. The tree structure can be arranged by vendors, DTM types and DTM groups.



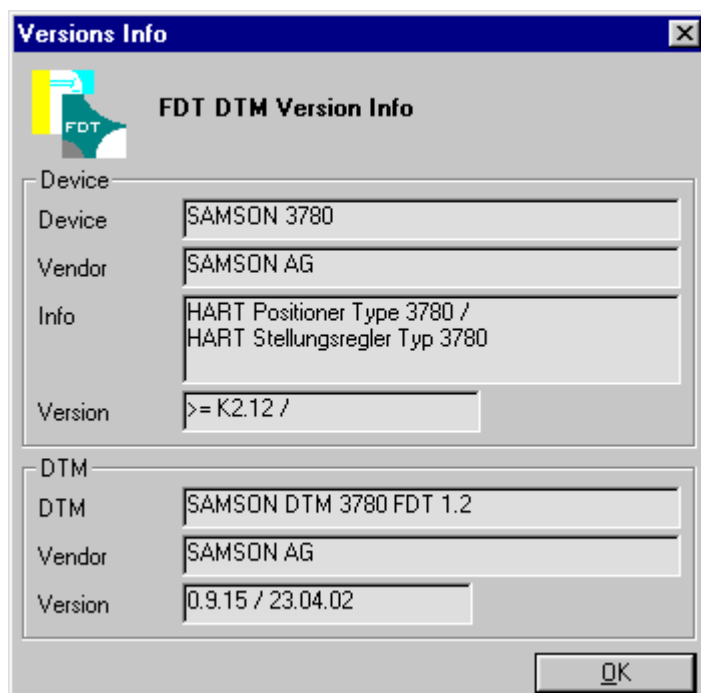
The initial start of the device catalogue displays the DTMs sorted by manufacturers.

The **PACTware** Clipboard is a special item of the overview allowing to save parts of the project and add them elsewhere in the project. This function accelerates the setup of extensive projects which consist of consistent parts.

DTMs which are later installed to the PC are entered to the device catalogue by using key **Init device catalogue**. This procedure must always be executed when installing a new DTM. This function can be executed by any user group.



The **Info** key provides information on the currently selected DTM and the device type it works with.



The selected DTM is added to the current position of the project structure by using the **Add** key. This function requires at least the User Rights of an operator.

## 4.3 Edit project

After opening or after creating a new empty project, its structure can be edited by adding or removing a **DTM** or by editing parts of the project.

A project cannot be modified as long as it is connected to a field device.

### 4.3.1 Add a DTM

The position of the project structure must be selected in the project structure to which an additional **DTM** is added.

Several options are provided to add a DTM to the project:

- by using key **Add** in the device catalogue
- by a double-click on the DTM in the device catalogue
- via 'drag and drop' from the device catalogue to the project window
- by the adjacent tool symbol located in the project window
- using the item **Add device** in the context menu or in the **Device** menu of a DTM

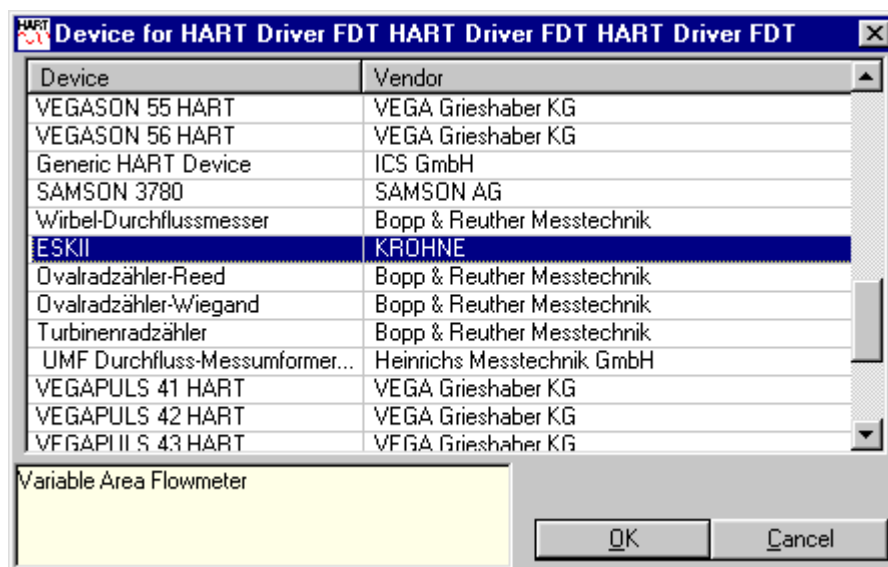






## Working with PACTware

When using one of the latter two options, a list of the admissible DTMs is displayed from which the requested DTM may be selected.



Whether a DTM can be added to the selected position of the project structure depends on the following conditions which are checked by **PACTware**:

- the **User Rights**
- the type of DTM to which the new DTM should be added.

PACTware ensures that e.g. only DTMs for Profibus-capable devices are added to Profibus ComDTMs or that only DTMs for HART-capable devices are added to HART-Multiplexers. If that is not the case, an error message is displayed.

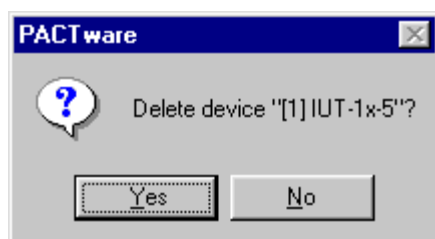
### 4.3.2 Remove a DTM

The following options allow to remove a **DTM** from the project structure:



- using the adjacent tool symbol located in the project structure
- using the keyboard key **Delete**

Before the DTM is deleted from the project a query is displayed to ensure that the DTM is not removed by mistake.





## Working with PACTware

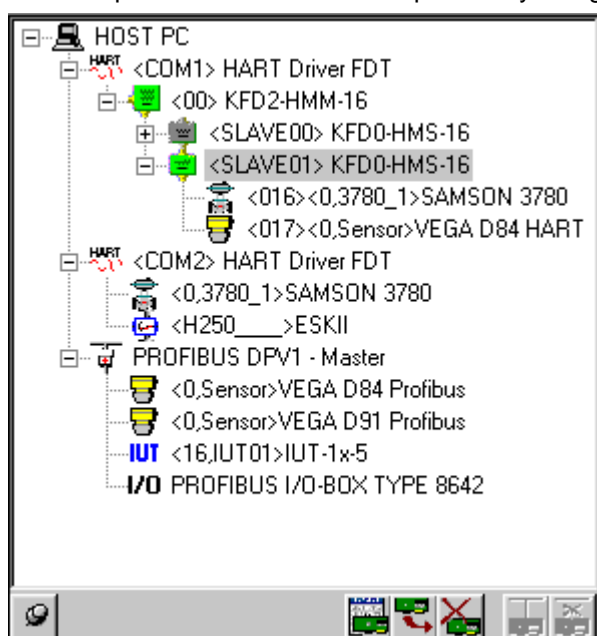
When a DTM to which additional DTMs are assigned is removed, the entire project part is such deleted.

**Caution:** PACTware offers no undo functions.

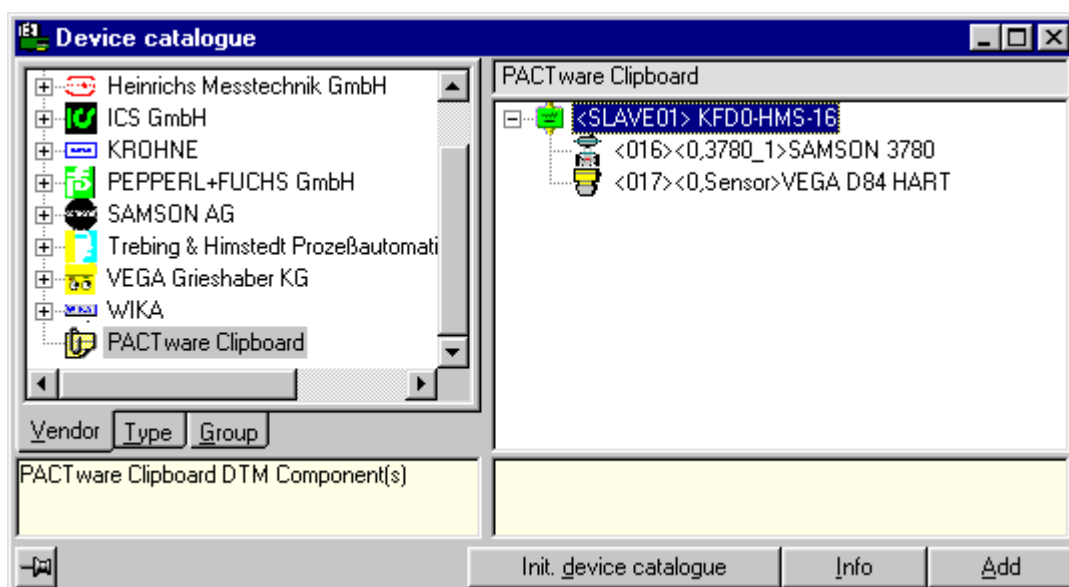
### 4.3.3 Add part of a project

When a project consists of multiple consistent parts, the configuration can be accelerated considerably by copying parts of the project.

In the project that is displayed in the figure the SLAVE01 string is selected. This part of a project can be copied to the PACTware Clipboard by using menu item **Copy** of menu **Edit**.



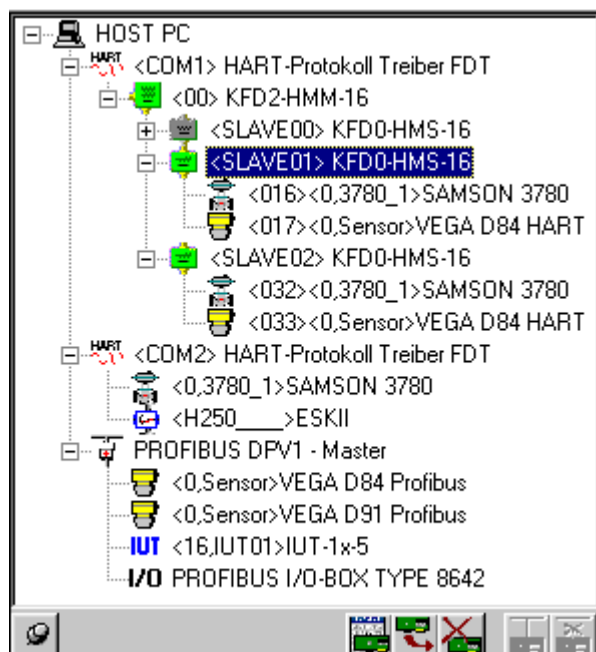
The following view is displayed in the **device catalogue** in the PACTware clipboard:





## Working with PACTware

The content of the PACTware Clipboard can be added to a previously designated location of the project via the **Add** key. For this function a user must at least possess **User Rights** of a planning engineer. The result can be seen in the following figure.



This function is only enabled if the user has Planning Engineer rights.

## 4.4 Parameterize device

A distinction is made between **Offline Parameterization** and **Online Parameterization**. When a connection is set up for the **DTM**, the Online Parameterization is automatically displayed, otherwise the window for Offline Parameterization of the device is displayed.

In the Offline Parameterization all parameters of a device that can also be defined with no device connected are configured. A project can such be finished with all its devices before the system start-up.

The Online Parameterization allows parameter changes during plant operation, e.g. to set up control parameters.

The parameterization of a device can be started as follows:

- via menu item **Parameter** in menu **Device**
- via menu item **Parameter** in the context menu of the DTM
- via the adjacent symbol in the toolbar
- via the same symbol in the toolbar of the project window
- and via a double click on a DTM name in the project window





The structure of the parameterization window depends on the individual device. Depending on the complexity of the DTM the parameters can be displayed in different windows. In this case a submenu is displayed following the selection of the parameterization.

## 4.5 Load from device

In order to load parameters from a field device, a connection must be setup. The type of displays provided to the user when the connection setup fails depend on the **DTM**.

A connection to a field device can be established in the following ways:

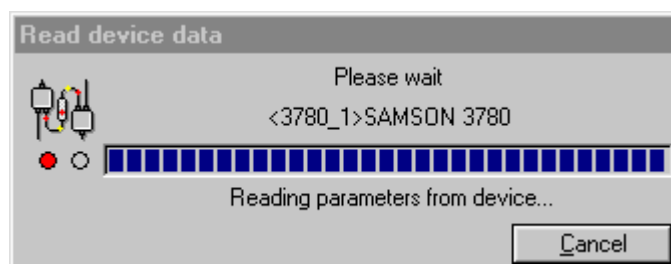
- via the item **Connect** in the menu **Device**
- via the item **Connect** in the context menu of a DTM
- implicitly via the symbol **Load from device**
- implicitly via the item **Load from device** in the menu **Device**
- implicitly via the item **Load from device** in the context menu of a DTM



When a connection to a field device was set up all DTMs involved in the communication line are identified in bold characters in the project window. Simultaneously the status line is coloured in green and the symbols are assigned their respective operator status.

Connections to several field devices can be set up simultaneously.

Parameters are uploaded from a field device when the corresponding symbol of the menu item **Load from device** in the menu **Device** or in the context menu of a DTM is activated. The following form containing a progress bar is displayed:



## 4.6 Store to device

In order to store parameters into a field device, a connection must be setup. The type of displays provided to the user when the connection setup fails depend on the **DTM**

A connection to a field device can be established in the following ways:

- via the item **Connect** in the menu **Device**
- via the item **Connect** in the context menu of a DTM
- implicitly via the symbol **Store to device**





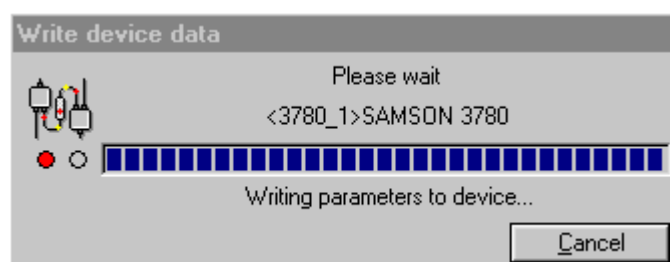
## Working with PACTware

- implicitly via the item **Store to device** in the menu **Device**
- implicitly via the item **Store to device** in the context menu of a DTM

When a connection to a field device was set up all DTMs involved in the communication line are identified in bold characters in the project window. Simultaneously the status line is coloured in green and the symbols are assigned their respective operator status.

Connections to several field devices can be set up simultaneously.

Parameters are downloaded to a field device when the corresponding symbol of the menu item **Store to device** in the menu **Device** or in the context menu of a DTM is activated. The following form containing a progress bar is displayed:

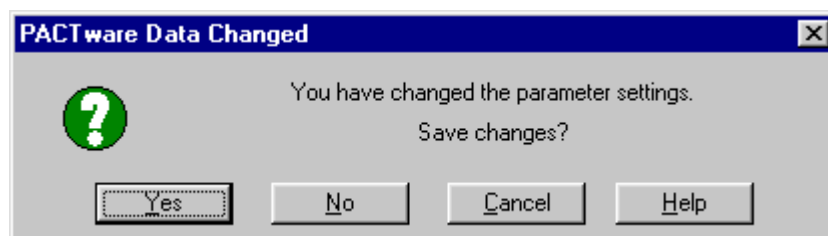


## 4.7 Save project

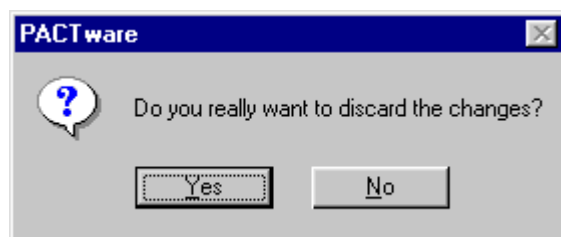


The project can be saved any time via the adjacent symbol or the entries **Save** or **Save as...** in the menu **File**.

When the project is closed via the item **Close** in the menu **File** or when the user wants to quit **PACTware** the following query is displayed:



When this query is answered by clicking **No**, another query is displayed asking if the changes really should be discarded:



## 4.8 Monitor Window

The monitor window is provided for error analysis. PACTware uses this window to document error states and program flows. Some communication drivers log the data exchange with the device.

**Caution:** This window should only be opened for trouble shooting. It is not recommended to open this window permanently in operated systems. The performance of PACTware is reduced by permanent logging.

```

SYSTEMTAG=4: IFdtContainer_LockDataSet()
SYSTEMTAG=4: IDtmEvents_OnOnlineStateChanged(False)
SYSTEMTAG=4: IDtmEvents_OnPreparedToReleaseCommunication()
<COM1> HART-Protokoll Treiber FDT 1.20 INFO : CMD : <000> ADDRESS: <00> MASTER:
DATALENGTH: 0
DATA: <>
WRITE: FF FF FF FF FF FF FF 02 80
READ : 00 FF FF FF FF FF 06 80 00
05 07 01 10 00 00 00 1C FF
STATE: <00 00>
DATALENGTH: 12
DATA: <FE 6C EE 05 05 07 01 10 00 00 00 00 00 00 00>
SYSTEMTAG=4: IDtmEvents_OnOnlineStateChanged(True)
INFO : CMD : <000> ADDRESS: <2C EE 00 00 1C> MASTER: <80>
DATALENGTH: 0
DATA: <>
WRITE: FF FF FF FF FF FF FF 82 AC EE 00 00 1C 00 00 DC
READ : 00 FF FF FF FF FF 86 AC EE 00 00 1C 00 0E 00 00
FE 6C EE 05 05 07 01 10 00 00 00 1C A0
STATE: <00 00>
DATALENGTH: 12
DATA: <FE 6C EE 05 05 07 01 10 00 00 00 00 1C>
SYSTEMTAG=4: IDtmEvents_OnErrorMessage()
SYSTEMTAG=4: DTMDoc001: Error creating XML: xml-document not found or empty

```

Error messages are displayed in red, debug-messages of the FDT functions in green and the communication outputs are displayed in black color.



## Working with PACTware

A filter for the recorded data is defined by using key **Settings**. In addition to the datasets that are exchanged with the field device via the HART-Protocol, the calls instantiated by the **FDT** interfaces or errors resulting thereof can be recorded. The development of DTM is supported by the Debug outputs.



The recorded data can be saved to a text file via key **Save**.

Key **Clear** deletes the recording from the monitor window.

## 4.9 Problem Report

When a DTM- or PACTware-related problem occurs, please inform the device manufacturer who delivered the DTM or PACTware.

For information about the PACTware supplier you may display the form via entry **Info about...** in menu **Help**. Information about the DTM is called via entry **Properties** in the Context menu of the device in the project structure or by using the **Info** key in the device catalogue after selecting the respective device from the catalogue.

Please state the operating system PACTware runs under and the PACTware and DTM program versions in your problem description. Any details about interactions or executed functions that may have caused the problem help find a solution. In addition, screenshots are useful in the analysis.



## 5. Glossary

### ComDTM

Communication Device Type Manager

A Software component, that must exist one time in each communication protocol, used in one project (e.g. HART, Profibus). In the project structure all other DTMs used for field devices, multiplexers or Remote I/O-systems are assigned to the ComDTMs.

### DTM

Device Type Manager

A Software component that executes the parameterization, configuration, calibration or the test of field devices depending on the individual device type. The DTM may have a graphical interface. A DTM that was developed in accordance with the FDT-specification may be integrated into Engineering Tools, Control Systems or configuration software like PACTware.

The PNO Guideline 2.172 provides a styleguide describing the design of the user interface of a DTM.

### FDT

Field Device Tool

The FDT Specification (PNO Guideline 2.162) describes how a DTM communicates with a frame application. All the interfaces between a DTM and a frame application are detailed.

### PACTware

Process Automation Configuration Tool

Configuration software that is available as Open Source to every field device manufacturer who is a member of the PACTware Consortium e.V.. For the first time it is such possible to configure and parameterize all field buses and field devices of a plant manufacturer-independent and by using one single engineering tool. The further development of this configuration software is sponsored by the PACTware Consortium e.V..

PACTware is a frame application according to the definition of the FDT Specification.

### User Rights

A distinction is made between 5 user groups editing projects, parameterizing and configuring field devices and the user management:

Observer (obsvr), Operator (oper), Maintenance (maint), Planning engineer (plan) and Administrator (admin)

The following table shows the privileges of all user groups.

Action	obsvr	oper	maint	plan	admin
<b>File</b>					
New	-	-	X	X	X
Open...	X	X	X	X	X
Close	X	X	X	X	X





## Glossary

Action	obsvr	oper	maint	plan	admin
Save	-	-	-	X	X
Save as ...	-	-	X	X	X
Print	X	X	X	X	X
Upload	-	-	X	X	X
Download	-	-	X	X	X
[File History]	X	X	X	X	X
Quit	X	X	X	X	X
<b>Edit</b>					
(Cut)					
Copy	-	-	X	X	X
(Paste)					
<b>View</b>					
Toolbar	X	X	X	X	X
Statusbar	X	X	X	X	X
Project window	X	X	X	X	X
Device catalogue	X	X	X	X	X
Monitor	X	X	X	X	X
<b>Device</b>					
Connect	X	X	X	X	X
Disconnect	X	X	X	X	X
Load from device	-	X	X	X	X
Store to device	-	-	X	X	X
Offline parameterization	-	-	X	X	X
Online parameterization	-	-	X	X	X
Measured value	X	X	X	X	X
Simulation	-	-	X	X	X
Diagnosis	X	X	X	X	X
(Compare offline)	X	X	X	X	X
(Compare online)	X	X	X	X	X
(Adjust set value)	-	X	X	X	X



## Glossary

Action	obsvr	oper	maint	plan	admin
Print	X	X	X	X	X
Write device data to file	-	-	X	X	X
Add device	-	-	-	X	X
Properties	X	X	X	X	X
<b>Extras</b>					
User management	-	-	-	-	X
Options	X	X	X	X	X
<b>Windows</b>					
Arrange	X	X	X	X	X
Next window	X	X	X	X	X
Close all	X	X	X	X	X
<b>Help</b>					
Contents	X	X	X	X	X
About	X	X	X	X	X