

Industrial^{IT} Asset Vision Professional 5.0 SP2

Basic Configuration and Operation



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About This Book

General

This manual describes the configuration, operation and commissioning of Asset Vision Professional including display navigation, device integration for Foundation Fieldbus, PROFIBUS and HART. This manual refers, at places, to 800xA System documentation and individual product documentation. Consider the following while referring to these documents in the context of Asset Vision Professional:

- Ignore all the sections and descriptions referring to 800xA specific configuration and operation. For example:
 - Configuration of AC800M controller and its I/O Modules
 - User Interfaces like Plant Explorer Workplace, Operator Workplace etc.,
 - All references to ControlBuilder M

Relate 800xA user accounts to corresponding Asset Vision Professional user accounts. For example: “800xA Service User” corresponds to “Asset Vision Professional Service User”.

Document Conventions

Microsoft Windows conventions are normally used for the standard presentation of material when entering text, key sequences, prompts, messages, menu items, screen elements, etc.

Warning, Caution, Information, and Tip Icons

This publication includes **Warning**, **Caution**, and **Information** where appropriate to point out safety related or other important information. It also includes **Tip** to

point out useful hints to the reader. The corresponding symbols should be interpreted as follows:



Electrical warning icon indicates the presence of a hazard which could result in *electrical shock*.



Warning icon indicates the presence of a hazard which could result in *personal injury*.



Caution icon indicates important information or warning related to the concept discussed in the text. It might indicate the presence of a hazard which could result in *corruption of software or damage to equipment/property*.



Information icon alerts the reader to pertinent facts and conditions.



Tip icon indicates advice on, for example, how to design your project or how to use a certain function

Although **Warning** hazards are related to personal injury, and **Caution** hazards are associated with equipment or property damage, it should be understood that operation of damaged equipment could, under certain operational conditions, result in degraded process performance leading to personal injury or death. Therefore, **fully comply** with all **Warning** and **Caution** notices.

Terminology

A complete and comprehensive list of Terms is included in the *IndustrialIT, 800xA System, Function Description (3BSE038018Rxxxx)*. A list of terms associated with Asset Vision Professional is provided at [Appendix A, Terminology](#).

Related Documentation

Following is a list of documents related to Asset Vision Professional.

Title	Description
Asset Vision Professional 5.0 SP2 Installation manual	This manual describes how to install Asset Vision Professional software.
Asset Vision Professional 5.0 SP2 Advanced Configuration Manual	This document provides greater detail on all areas of usage of Asset Vision Professional. It is intended for advanced usage of Asset Vision Professional covering details such as SNMP and CMMS setup.

Section 1 Overview

Asset Vision Professional is an application used for configuring, parameterizing, diagnosing and maintaining field devices.

The key functional areas within Asset Vision Professional are:

- Field Device Management
- Asset Optimization

Users can use the above mentioned functional areas using the Asset Vision Professional Workplace. The traditional engineering functions for device parameterization and configuration are available in Asset Vision Professional Workplace.

The enabling technique for the above is the Aspect Object™ technology.



For further information, refer to:

- *3BSE041389R5021 - IndustrialIT 800xA Engineering Planning and Concepts*

The documents can be found on DVD1 in the Released Documentation\800xA folder. Alternatively, the latest version of the documents can be downloaded from [ABB Solutions Bank](#).

System Functions - Introduction and Description

Aspect Object - Introduction

The Aspect Objects handled in the engineering process for Asset Vision Professional System represent physical objects (for example Multiplexer, HART modem) or virtual objects (for example functions, process objects), and are used as containers for engineering and runtime data.

Most of these objects can be instances of preconfigured, ready to use object types from libraries or object type groups provided with Asset Vision Professional System. For example libraries and object type groups provided with Device management PH. Further, configuring these objects is supported by preconfigured, ready to use aspect categories provided with the aspect systems of Asset Vision Professional System.

The engineering tools support a concept of plant modelling by using Aspect Objects and structures. This concept is outlined below by describing example categories of objects from functional perspective.

Aspect Object™

A plant is made up of many tangible entities such as pipes, tanks, valves, motors etc.,. In the Aspect Object solution, these entities or objects are modeled in Asset Vision Professional. Such a modeled object is called an Aspect Object and it can be a simple lowest level object or it can contain other objects. Objects containing other objects are called composite objects.

The Aspect Object system can also handle computer related objects the same way as real entity objects. Example of such objects are user object, node object, workplace object, etc.

Aspect

Different information types are connected to each object. These information types are called Aspects in the Aspect Object solution. For example, a valve may have a mechanical drawing and an operation manual. Aspect Objects have a number of default aspects; for example its name.

Aspect Objects are visualized with different tools like trends, alarm lists, etc. Right-click on a object to display the aspect context menu. This displays a list of available aspects from which a desired aspect is selected. Depending on the aspect and the environment, the information is presented on the screen in the appropriate tool.

Aspect View

A view is a visual representation of an aspect on the screen. Some aspects have more than one view. One example is an Acrobat Reader *.pdf file of the Operation Manual. Most aspects also have a configuration view.

Object Types

An Object Type defines certain characteristics that are common to several physical objects, such as a basic set of common aspects. This makes it possible to create and efficiently reuse the standardized solutions to frequently recurring problems. For example, rather than building an Object from scratch for every valve in a plant, define a set of valve object types, and then create all valve objects as instances of these types. When an instance of an object type is created, the aspects that are defined in the object type are instantiated and associated with it.

Basic Structures

The Asset Vision Professional is used to build and maintain a model for the plant that has to be managed and supervised.

The relation between objects are established by placing them in one of the following predefined basic structures for aspect objects:

- Control Structure
- Asset Structure
- Library Structure
- Object Type Structure

Placing objects into these predefined structures supports the navigation among engineering data, and the designation of the objects in the plant. One aspect object can be part of several structures at the same time, see [Figure 1](#).

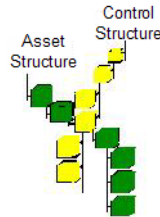


Figure 1. One Aspect Object in two structures

Asset Vision Professional Startup

Opening Asset Vision Professional Workplace

Double-click My ePlant icon on the desktop to open the Asset Vision Professional Workplace, see [Figure 2](#).



Figure 2. My ePlant Icon

Alternatively, right-click the My ePlant icon to open the Asset Vision Professional Workplace from the displayed context menu. For Asset Vision Professional, there is only one Workplace and the default Workplace it is boldfaced. The next section displays the available system, which is named Asset Vision Professional.

The Workplace cannot be opened if the system is not running. To start the system, the logged on user must have administrator privileges. Double-click the

Configuration Wizard available on the desktop or select **Start > All Programs > ABB Industrial IT 800xA > System > Configuration Wizard**.



Figure 3. My ePlant Context Menu

The Workplace can also be started by selecting **Start > All Programs > ABB Industrial IT 800xA > System > Workplace**. A screen similar to the one shown in Figure 4 is displayed.

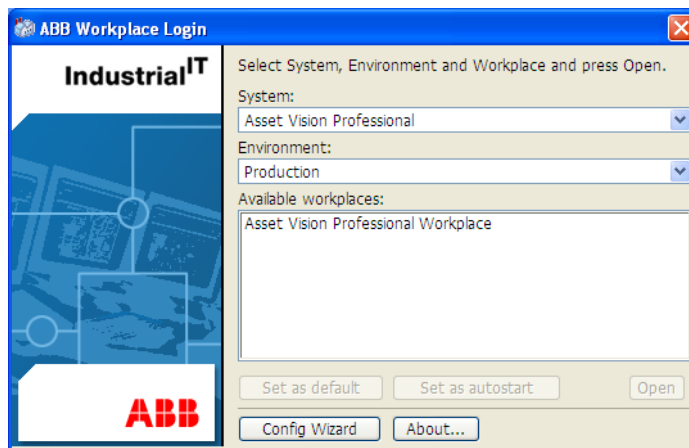


Figure 4. Asset Vision Professional Workplace Login

Select the required system and the environment to login, from the respective drop-down lists. The available workplace for the chosen system is displayed. Select the workplace to be used and click **Open**.

Close Asset Vision Professional Workplace

Click the **Close Workplace** button in the Application Bar to close the Asset Vision Professional Workplace, see [Figure 5](#).

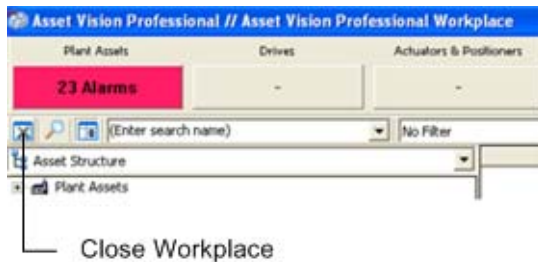


Figure 5. Close Workplace

Asset Vision Professional Workplace

The Asset Vision Professional Workplace is the environment from where the user views and configures the plant devices.

Basic Display

The Asset Vision Professional Workplace window is divided into the following main parts:

the Application Bar, two Object Browser, the Aspect Browser, the Display Bar, the Aspect View Area and the Status Bar, all of which are described in this section.

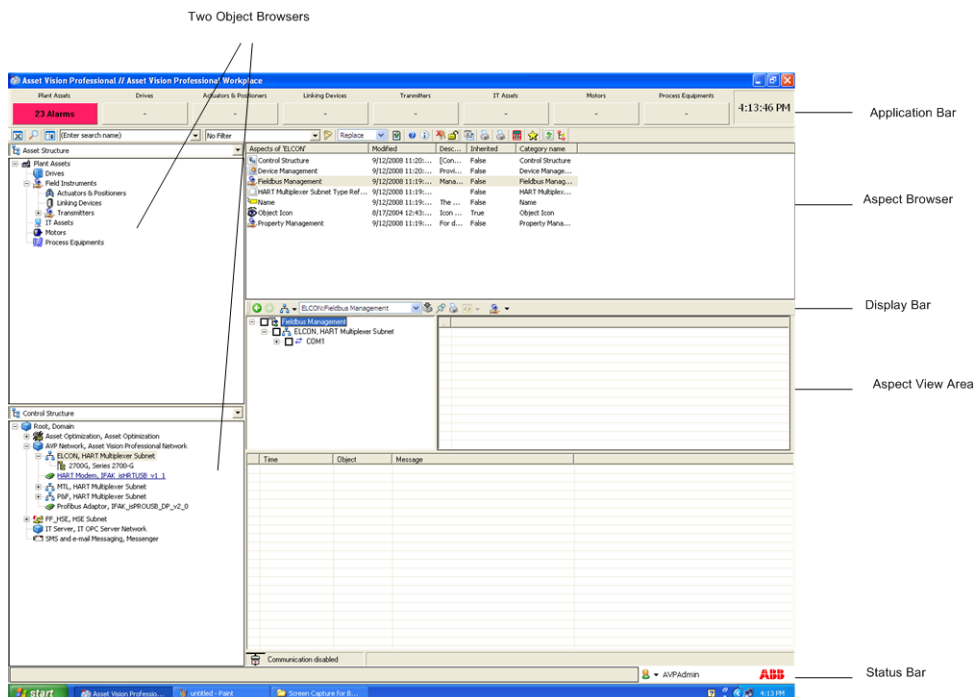


Figure 6. Asset Vision Professional Workplace

Application Bar

The Application Bar is available at the top of the Asset Vision Professional Workplace window. It displays information that must be always visible.

The Application Bar displays the latest alarms, provides easy access to the alarm situation for a process area, and it also provides direct links to displays or to other aspects and tools.

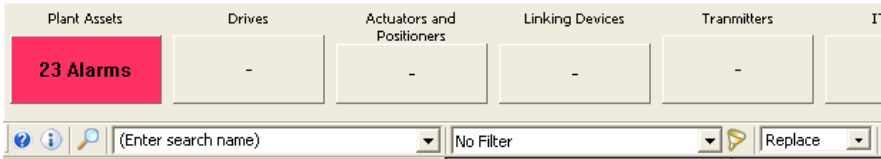


Figure 7. Application Bar

The **Alarm Band** provides a summary display for selected alarm lists and provides a link to the corresponding alarm list display. The number on a button (for example, 11 for Process Alarms) indicates the number of currently unacknowledged alarms. The color of the button shows the highest priority alarm presently available. To go to an alarm list, click on the Alarm Band as shown in [Figure 8](#).

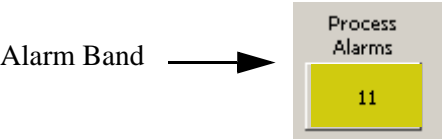


Figure 8. Alarm Band

The **Tool Bar** provides access to different useful tools.

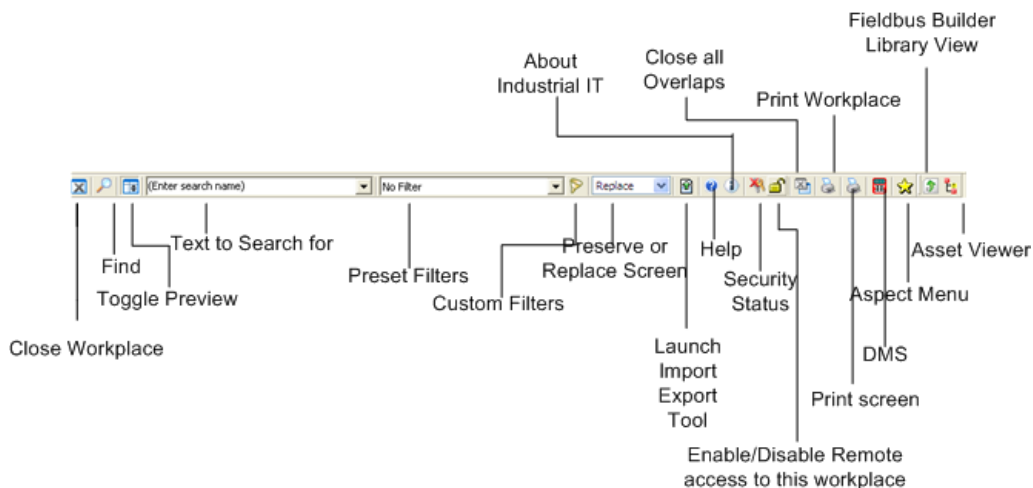


Figure 9. Tool Bar

- **Find Tool** provides fast access to a particular aspect or aspect objects sharing the same name by typing the name of the aspect object or the path to the aspect object in the Find Tool dialog.
- The **Toggle Preview** switches the Aspect Viewer on and off. When it is switched on, the Aspect Viewer is not displayed. When it is switched off, the Aspect Viewer is displayed.
- **Aspect Menu (Favorites)** lists the aspects that are chosen to be placed in the favorites list for fast access. See also [Favorites](#).
- **Print Screen** prints the Operator Workplace contents. The screen where the tool is clicked will be printed.
- **Close All Overlaps** closes all overlapping windows (pop-up windows) opened in the Operator Workplace.
- **Help** displays the On-line Help.

- **About Industrial IT** displays information about the installed systems and extensions
- **FF Upload** displays the FF Upload aspect.
- **Asset Viewer** displays the plant assets object type structure (FF libraries).
- **DMS** - opens the Meriam's DMS software.

Object Browser

The object browser, lists all objects that are created or inserted into the selected structure. The displayed objects vary according to the selected structure. The Asset Structure, list objects by the type of asset they represent. The Control Structure, list objects that are physically related to the control system.

The drop-down list is used to select the required structure to view and interact with objects. In the Asset Vision Professional workplace, there are two object browser lists, with one directly over the other. The default view with the top list using the Asset Structure and bottom list using the Control Structure can be freely changed with other structure selections. The same object can appear in multiple structures. Copying of an object shortcut from one structure to another is performed by drag-and-drop while holding the shift-key. Right-click on an object to display a context menu allowing selection of other aspects or actions (i.e., alarm acknowledgement). Objects are maintained in an object tree format similar to the one used in Windows

Explorer. Indented objects are grouped under non-indented objects for better understanding of the relationship between objects.

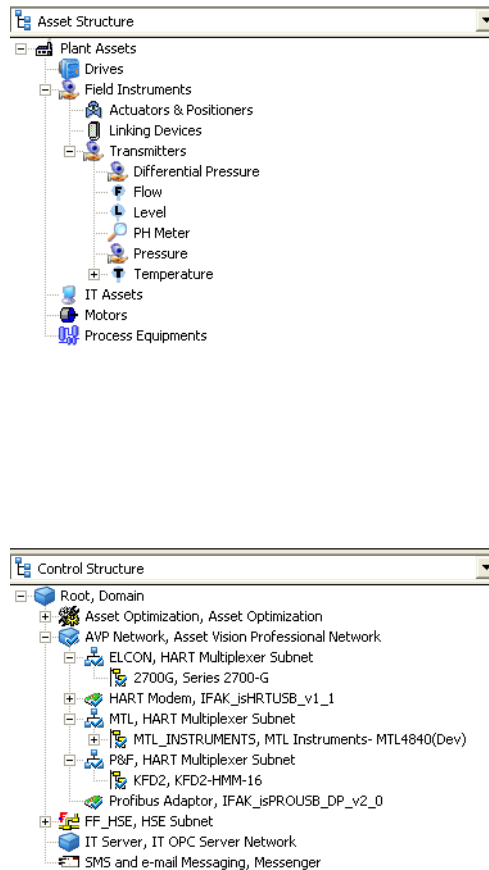


Figure 10. Object Browser

Aspect Browser

The aspect browser lists all aspects created or inserted for the selected object. The selected object can be from either object browser list or the last selected object being the one used to populate the aspect browser. Unlike the object browser, the

aspect browser lists all aspects in a flat structure without any grouping or indenting of aspects. Right-click on an aspect displays a context menu, which allows selection of other aspects or actions (i.e., alarm acknowledgement). Each aspect has a default view. Selecting an Aspect in the Aspect Browser list, displays the default view into the Display Area.

Aspects of 'TT557'	Modified	Desc...	Inherited	Category name
ABB_THx02_v1_2 Type Reference	6/15/2006 12:07:...		False	ABB_THx02_v1...
Alarm List	11/15/2003 6:57:...	This ...	True	Alarm and Even...
Asset Reporter	6/15/2006 12:27:...	This ...	False	Asset Reporter
Asset Structure	6/15/2006 12:07:...	[Ass...	False	Asset Structure
Asset Viewer	6/15/2006 12:07:...		False	Asset Viewer
AssetMonitorProperties	6/15/2006 12:25:...		False	Asset Monitor C...
Calibration Event List	11/25/2003 2:36:...	This ...	True	Alarm and Even...
Control Connection	6/16/2006 5:01:2...	Holds...	False	OPC Control Co...
Control Structure	6/15/2006 12:27:...	[Con...	False	Control Structure
Device Management	6/27/2006 1:51:2...	Provi...	False	Device Manage...
DMS	6/15/2006 12:07:...	This ...	False	DMS
DMS Asset Monitor	6/15/2006 12:29:...		False	DMS Asset Moni...
Event List	11/15/2003 6:56:...	This ...	True	Alarm and Even...
Fault Report Submitter	6/15/2006 12:07:...	This ...	False	Fault Report Su...
Fieldbus Management	6/15/2006 12:27:...	Mana...	False	Fieldbus Manag...
HART ABB TH02/102/202 Asset M...	6/15/2006 12:29:...	HAR...	False	HART ABB TH0...
Maximo Equipment ID	6/15/2006 12:07:...		False	Maximo Equipm...

Figure 11. Aspect Browser

Display Bar

The Display Bar, see Figure 12, is available above the Aspect View area and is used to control and identify the contents of the Aspect View Area.

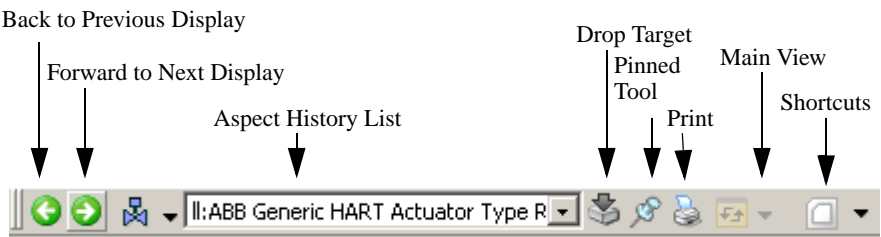


Figure 12. The Display Bar

- **Back to Previous Display** shows the previous display. See also [Backward and Forward Buttons](#) on page 28.
- **Forward to Next Display** shows the next display. See also [Backward and Forward Buttons](#) on page 28.
- **Aspect History List** lists the most recently viewed aspects or type of information (the latest used display on top).
- **Drop Target** Drag an aspect to the Drop Target to be displayed in the Display Area.
- **Pinned Tool** pins the display like a note on a billboard. The display cannot be changed by clicking the Backward or Forward button, or drop a display on the Drop Target tool. To change the display, remove the pinning of the display.
- **Main View** shows a drop-down menu of the other available views of the aspect selected. Placing the cursor on the View Selector, displays the tool tip with the current view.
- **Shortcuts** provides shortcuts to specific displays. Shortcuts can be added and configured to point out specific displays.

Display Area

The display area displays the Aspect Views. It displays a view of an aspect (a display), and presents information like documents, alarm lists, Device Type Manager (DTM), etc. Double-click the aspect to pop-up the displays

The tools in the Asset Vision Professional Workplace are used to control and identify the contents of the Display area.

Device	
Company / ID:	ABB Automation / 22
Device Type / Device ID:	8 / 0
Final Assembly No.:	0
Tag / Long Tag:	-/- /
Transducer	
Units for Limits and Span:	-/-
Lower / Upper Limit:	0 / 0
Minimum Span:	0
Serial Number:	0
Revision Levels	
Software / Hardware:	0 / 0 - Bell 202 Current
Device / Universal Commands:	0 / 0

Figure 13. The Display Area

Status Bar

The Status Bar occupies the lower part of the Asset Vision Professional Workplace window.



Figure 14. Status Bar

- The **Current User Tool** displays the current user. Users have different roles and privileges depending on security settings.

Navigation

This section describes the navigation to different displays, or aspects in the Asset Vision Professional Workplace. The aspect types involved include DTMs, asset reporting documents, alarm lists etc.

Basic Navigation

The previous section described the basic display of Asset Vision Professional, which contains a number of tools to find objects and aspects in the system. The tool icons are present in one of two bars:

- [Application Bar](#) on page 19 contains information that must be present always. One example is the alarm band. Tools in the application bar typically influence the workplace or handle aspect objects. Some of the tools are very useful for navigating to displays.
- [Display Bar](#) on page 24 influences the display area only and is the main area for navigating between displays.

To navigate between displays, the following tools and tool handling must be considered. They are highlighted here because of the few steps needed to invoke a new display on the screen and ease of use.

The most efficient tools are shortcuts:

- In the application bar, **Favorites** (Aspect Menu) contains a menu of displays such as DTM, asset reporting and document displays respectively. The user can add favorites when required. The resulting shortcuts are displayed as Icons on the right side of the application bar.
- In the display bar, **Shortcuts** are configured holding a number of displays. If the plant has a number of sections, typically displays contained in each section may be stored under an Icon in the display bar.
- In the display bar, **Shortcuts** are built for navigating to another display. These displays are used to navigate from one section to another.

Other feasible tools:

- **Right Mouse** button is used to point at an object in a display or in a list and right-click. Right-click an object to display the context menu, which shows the possible display alternatives for that object.
- In the display bar, the **Forward** and **Backward** button shows the previous or the next display used.

In the following section, these tools for navigation are described.

Display Switching

There are different ways of navigation in the Asset Vision Professional Workplace. The most basic way for faster access to the aspect objects are described below:

Shortcuts

Shortcuts are used to navigate to the most important and/or to navigate through the most frequently used aspects of different aspect objects.

Backward and Forward Buttons

Click on the **Back to Previous Display** button to go back to the previous display. If the button is disabled, it is impossible to view the previous display.

Click on the **Forward to Next Display** button to go to the next display. If the button is disabled, it is impossible to view the previous display.



Figure 15. Backward and Forward Buttons

Favorites

Click on the Aspect Menu icon in the Tool Bar. The Aspect Menu is displayed in a screen similar to the one shown in [Figure 16](#). From the Aspect Menu, navigate to different displays by clicking the Aspect Favorites.

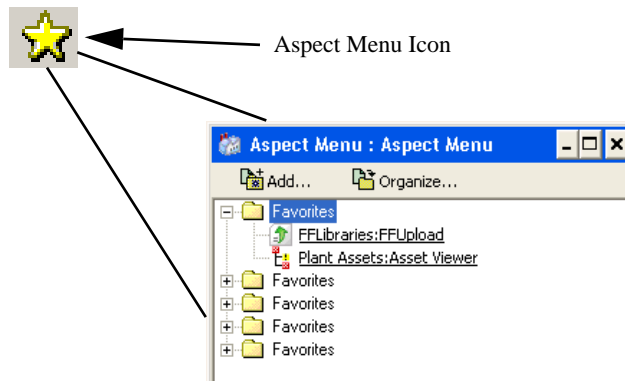


Figure 16. Aspect Menu Icon and Aspect Menu

The Aspect Favorites can be accessed from the Tool Bar, by clicking on the Aspect Menu icon. The Aspect Menu tool, is used to add, copy, paste and rearrange the Aspect Favorites by using the **Add** and **Organize** buttons. It is also possible to add aspects to the user's Aspect Favorites, using the aspect context menu.

Aspect Favorites is defined per user and per user group. The modifications a user makes, using the favorites function, will be applied to the user's Aspect Favorites.

Accessing and Using the Aspect Menu

Click on the Aspect Menu icon and the Aspect Menu is displayed at the configured position on the screen. This can be as a pop-up or in the display area, if it includes a dedicated area for the tool. The Aspect Menu shows the Aspect Favorites of the current user and the user group, the user belongs to.

Adding Aspect Favorites

There are three ways to add a favorite.

1. Select the aspect to be added. Open its context menu and select **Add to Aspect Menu**. A dialog is displayed, where the folder and name is selected for the new favorite.
2. Open the drop-down menu from the aspect icon in the Display Bar (if available) and select **Add to Aspect Menu**.
3. Click on the **Add** button in the Aspect Menu. The Add Aspect Favorite dialog is displayed in a screen, similar to the one shown in [Figure 17](#), which is used to

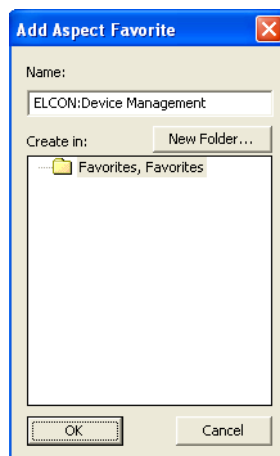


Figure 17. Add Aspect Favorites

- select the aspect to add to the favorites list. The favorite is added in the folder selected in the Aspect Menu. In the Add Aspect Favorite dialog, select the folder to create the Aspect Favorite in by clicking on it. Select **New Folder**, if the Aspect Favorite is to be placed in a new folder. The name of the Aspect Favorite can also be changed.
4. Click **OK** to add the Aspect Favorite.

Organizing Aspect Favorites

It is possible to organize Aspect Favorites in folders. This is done when new Aspect Favorites are added by using the Organize Aspect Menu dialog box. In the Aspect Menu, click the **Organize** button to open the Organize Aspect Menu dialog.

A screen, similar to the one shown in [Figure 18](#), displays new folders that are created, moved, deleted or removed. Aspect Favorites can be moved, renamed or

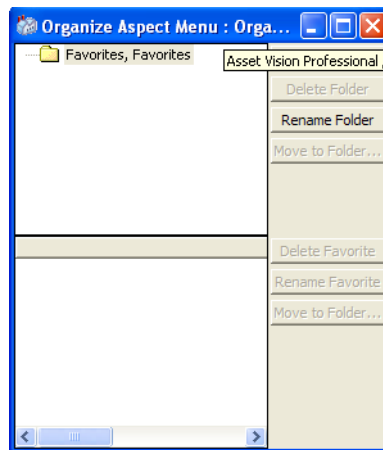


Figure 18. Organize Aspect Menu

deleted. Folders and favorites can be moved by dragging and dropping.

Favorites Bar in the Application Bar

A Favorites Bar is displayed in the Application Bar. The Favorites Bar shows the same favorites as the Aspect Menu. Click on an aspect icon to open the favorite. Click on the drop-down arrow to view a list of favorites organized under this folder. Place the mouse pointer over an icon, and the tool tip displays the name of the favorite aspect.

Context Menu

Right-click on an object or an aspect to display the context menu. For example, select an aspect, action or a referenced display for the object or aspect from the context menu.

The contents of the context menu differs depending on the object or aspect selected. The contents also differ depending on the filter that is active.

The different parts of the object context menu are as follows ([Figure 19](#)):

- The **Default Aspect** (always the one in bold) displays the default aspect for the current selected object.
- The **Aspect List** is a list of all viewable aspects connected to the object which are not filtered away by the active aspect filter.
- **References** contains a list of displays the object has references to.

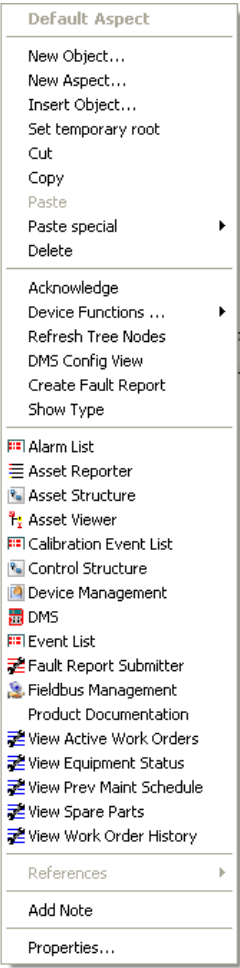


Figure 19. Example of an Object Context Menu

Maintenance Filters and Asset Structure

The Asset Structure provides the possibility for maintenance personnel to group and arrange plant assets in the way it is needed for efficient daily work. Control topology constraints can be overcome and even devices with different fieldbus protocols can be grouped together, if they require similar maintenance procedures.

The Asset Structure comes by default with five major groups of Assets:

- Drives
- Field Instruments
- IT Assets
- Motors
- Process Equipment

The typical structure to work within the Asset Vision Professional Workplace is the Asset Structure as shown in [Figure 20](#). By default, the Asset Structure displays five groups of plant assets. The Field Instruments group has subgroups for Actuator, Linking Devices, and Transmitters. The Transmitter group is further structured to allow a unique group for the different transmitter types.

The user can change the structure at any time by adding, renaming, rearranging, or deleting Asset Groups or subgroups.

The primary Asset Groups have Alarm List aspects that report the Asset Alarms from all objects beneath them. These Alarm Lists, drive the Alarm Groups in the

Alarm Band of the Asset Vision Professional Workplace as shown in [Figure 21](#). Asset Alarms are Asset Health Condition information reported by Asset Monitors.

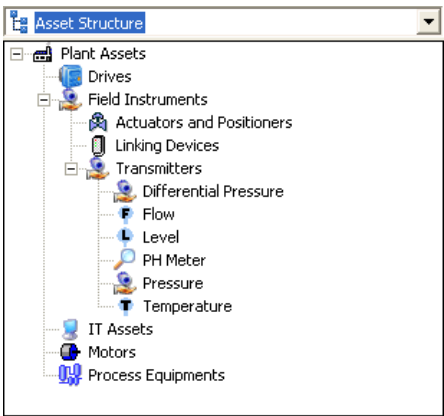


Figure 20. Asset Structure

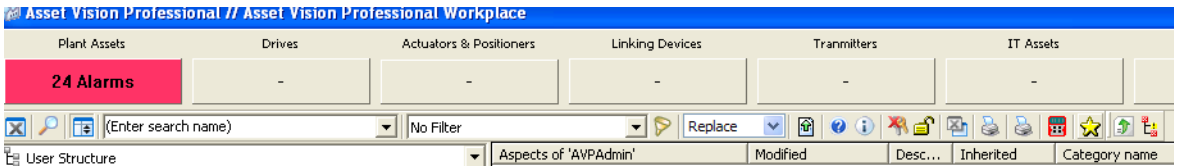


Figure 21. Alarm Band

Maintenance Filter

The Asset Vision Professional Workplace comes with three default filters that are designed to expose only those aspects that are needed for the typical maintenance

workflow as shown in [Figure 22](#), highlights the Alarm Band with the Maintenance - Technician filter selected.

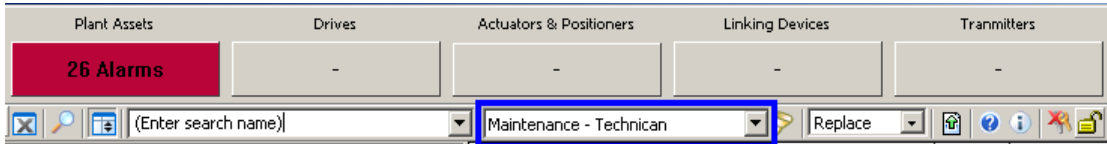


Figure 22. Maintenance Filter

The default filters are:

- **Maintenance - Technician:** The standard filter for all maintenance technicians. It exposes only those aspects that are needed to view diagnostic or health

condition information and react or execute the related actions. [Figure 23](#) displays all available aspects for this filter.

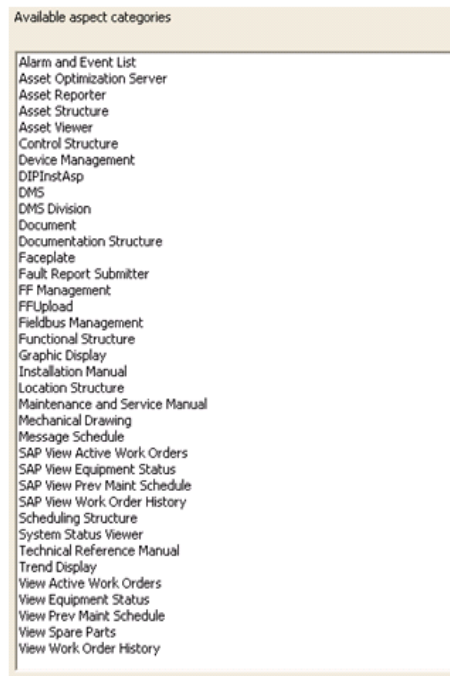


Figure 23. Available Aspects for Maintenance - Technician Filter

- **Maintenance - Manager:** Provides the available specific diagnostic aspects. For example, it provides access to all Asset Monitor aspects rather than the Asset Reporter only.
- **Maintenance - Engineer:** Displays all aspects that are needed to do configuration work in the system, from a maintenance point of view. For example, adding Asset Monitors to Objects, commissioning Asset Monitors, etc.

Alarm and Events

Alarms from the devices are viewed and acted upon from the Asset Vision Professional Workplace using lists, alarm summary indication etc.

An alarm list includes the alarms that a user needs to pay attention to, normally unacknowledged and still active alarms.

Alarm List

Accessing and Reading

Examples of accessing different Alarm lists are listed below.

- Click on an Alarm List aspect to see a list of all alarms for a specific device type in a screen, similar to the one shown in [Figure 24](#). To know more about Alarm Band, see [Alarm Band](#) on page 42.

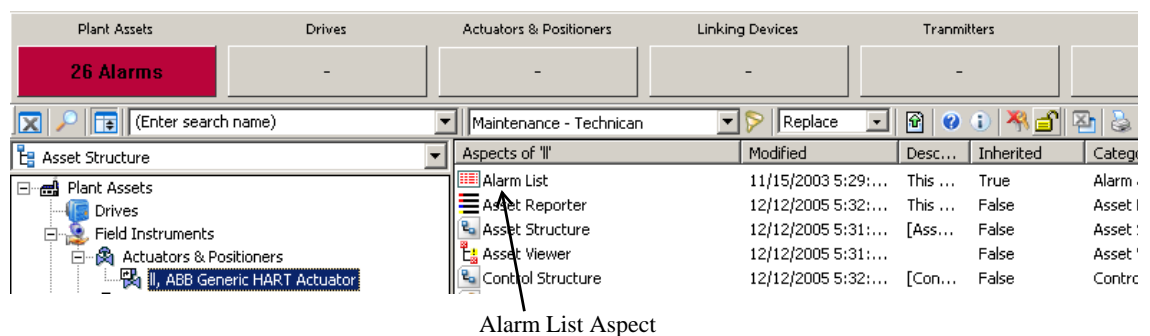
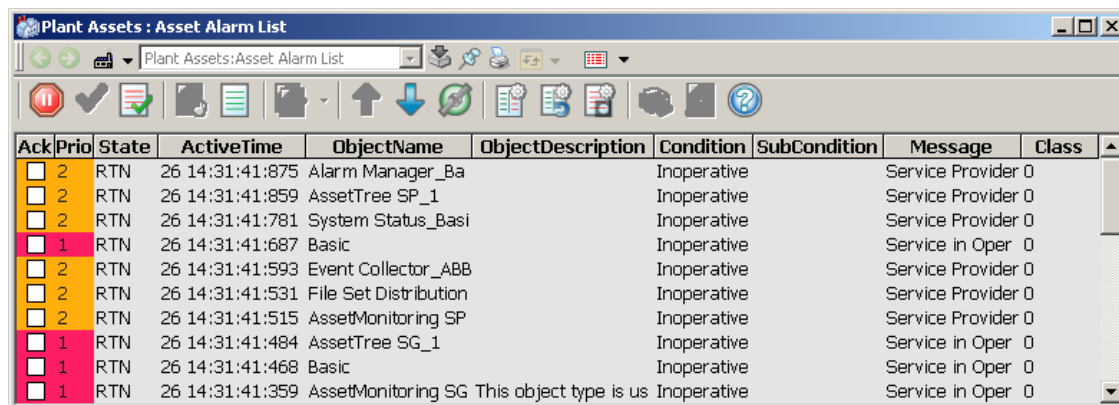


Figure 24. Accessing the Alarm List

- Click on the Alarm List aspect in the Aspect List area to see a list of all alarms for the selected device.



The screenshot shows a software window titled "Plant Assets : Asset Alarm List". It contains a table with 10 columns: Ack, Prio, State, ActiveTime, ObjectName, ObjectDescription, Condition, SubCondition, Message, and Class. The table lists several alarms, each with a checkbox in the Ack column, a priority number in Prio, a state (RTN) in State, a timestamp in ActiveTime, an object name in ObjectName, a description in ObjectDescription, a condition (Inoperative) in Condition, a subcondition (Service Provider 0 or Service in Oper 0) in SubCondition, a message in Message, and a class in Class.

Ack	Prio	State	ActiveTime	ObjectName	ObjectDescription	Condition	SubCondition	Message	Class
<input type="checkbox"/>	2	RTN	26 14:31:41:875	Alarm Manager_Ba		Inoperative		Service Provider 0	
<input type="checkbox"/>	2	RTN	26 14:31:41:859	AssetTree SP_1		Inoperative		Service Provider 0	
<input type="checkbox"/>	2	RTN	26 14:31:41:781	System Status_Basi		Inoperative		Service Provider 0	
<input type="checkbox"/>	1	RTN	26 14:31:41:687	Basic		Inoperative		Service in Oper 0	
<input type="checkbox"/>	2	RTN	26 14:31:41:593	Event Collector_ABB		Inoperative		Service Provider 0	
<input type="checkbox"/>	2	RTN	26 14:31:41:531	File Set Distribution		Inoperative		Service Provider 0	
<input type="checkbox"/>	2	RTN	26 14:31:41:515	AssetMonitoring SP		Inoperative		Service Provider 0	
<input type="checkbox"/>	1	RTN	26 14:31:41:484	AssetTree SG_1		Inoperative		Service in Oper 0	
<input type="checkbox"/>	1	RTN	26 14:31:41:468	Basic		Inoperative		Service in Oper 0	
<input type="checkbox"/>	1	RTN	26 14:31:41:359	AssetMonitoring SG	This object type is us	Inoperative		Service in Oper 0	

Figure 25. Process Alarm List

Columns

The different default columns in the Alarm List are described below:

- **Ack State** - displays if the process alarm is acknowledged or not
- **Active Time** - displays the time when the process alarm was generated
- **Object Name**- displays the name of the process object
- **Object Description** - displays the description about the process object
- **Condition** - name of the condition, for example, Limit exceeded
- **Subcondition** - displays which subcondition is active
- **Message Description** - displays a short description about the process alarm

Context Menu

Right-click on an alarm line in the alarm list to display the context menu in a screen, similar to the one shown in [Figure 26](#). Use the context menu to perform certain

actions on this alarm line. For example, acknowledge the selected alarm, silence the audible alarm or add a note.

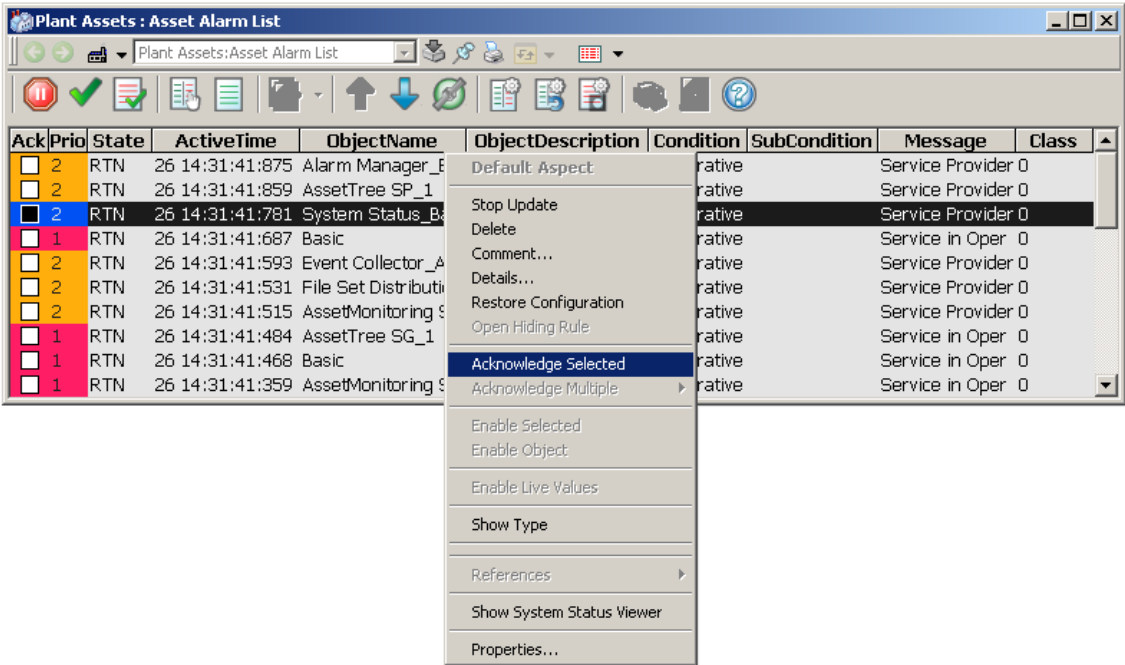


Figure 26. Context Menu for Alarm

Acknowledge



Alarm acknowledgement for an object is performed in the following ways:

- Click on the **Ack State** box for the alarm in the list.
- Right-click on an alarm line and select **Acknowledge** (all alarms for that object will be acknowledged) or **Acknowledge Selected** (only the selected object will be acknowledged) from the context menu.

- Select one or several alarms in the alarm list and click the **Acknowledge** button (green check mark).
- Click on the alarm status button in a faceplate.
- Use the Hot Key CTRL+SHIFT+Q (all active alarms will be acknowledged).



The user needs to be granted permission to acknowledge an alarm.

Working with an Alarm List

The activities to work with an Alarm List are described below.

Alarm List Tool Bar

The different tools in the Alarm List Tool Bar are described below:

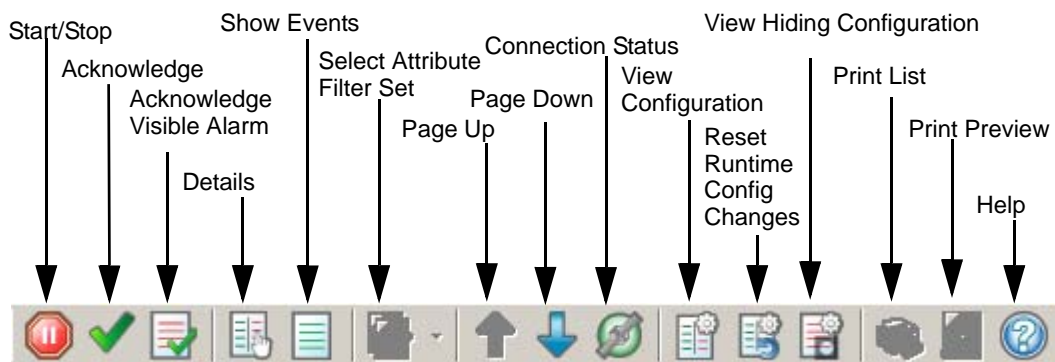


Figure 27. Alarm List Tool Bar

- **Stop/Start/Restart** - Click **Start** to start, restart or stop list updates.
- **Acknowledge** - See [Acknowledge](#) on page 40.
- **Details** - Click **Details** to view extended information about the selected alarm.
- **Page Up** - Click **Page Up** to display the previous 500 alarms in a list.
- **Page Down** - Click **Page Down** to display the next 500 alarms in a list.

- **View Hiding Configuration** - Click **View Hiding Configuration** to view the Hiding Mask Manager.
- **Print List** - See [Print](#) on page 42.
- **Print Preview** - See [Print](#) on page 42.
- **Help** - Click **Help** to read the details regarding the alarm list in the On-line Help.

Sorting Columns

To sort a column, double-click on the column header. Repeat this action to reverse the sorting. For example, sorting **Source Name** once results in the alphabetical sorting of the items (A...Z). Sorting for a second time results in the reverse sorting of the items (Z...A).

Print



Figure 28. Print Buttons

Click **Print List**, the list displayed is printed on a default local or network printer.

Click **Print Preview**, the list displayed is presented in a preview window (only if the printer software is installed in the workstation).

Alarm Band

Accessing and Reading

The Alarm Band, provides a link to an Alarm List for a specific process area. The number within the band represents the number of unacknowledged alarms.

The color of the band represent the highest priority alarm present. Click on the Alarm Band (button) to go to the Alarm List.

Plant Assets	Drives	Actuators & Positioners	Linking Devices	Transmitters	IT Assets
23 Alarms	-	-	-	-	-

Figure 29. Alarm Band

A red cross over the Alarm Band indicates that the alarm band does not have contact with the Asset Vision Professional alarm service.



For further information, refer to:

3BSE036903R5021 - Industrial^{IT} 800xA System Basic Operation manual.

Ignore sections 3, 5, 8 and 9 in the above manual.

The documents can be found on DVD1 in the Released Documentation\800xA folder. Alternatively, the latest version of the documents can be downloaded from [ABB Solutions Bank](#).

Backup & Restore

It is possible for software and data to become corrupted. An alternative to such an event is to take a backup of the system, and restore it later on when the system becomes functional again. The backup and restore procedure consists of two different parts; backup of standard Windows system and backup of the System application data.

The procedures for backup and restore are explained in greater depth in the manual *3BSE046784R5021-Industrial^{IT} 800xA System, System Maintenance*.

Section 2 FOUNDATION Fieldbus

Product Overview

FOUNDATION Fieldbus provides an open standard for process automation applications and is supported by all the major control and automation product manufacturers. It consists of a low-speed bus (H1) designed for the interconnection of field equipment such as sensors, actuators, and I/O, and a high-speed bus (HSE, High Speed Ethernet) allowing optimization of network design and integration of high speed controllers (such as PLC or DCS), H1 subsystems (using linking devices), data servers and workstations. FOUNDATION Fieldbus provides built-in capability to distribute the control application across the network.

FOUNDATION Fieldbus (FF) supports two communication profiles, H1 and HSE. The H1 profile, with a transmission rate of 31.25 kilobits per second, is preferably used for direct communication between field devices in one link (H1 link). The HSE profile, is based on standard Ethernet and typically features a transmission rate of 100 megabits per second, serves first and foremost as a powerful backbone for the connection between H1 links. The FF linking devices are available in the market and supports HSE profile. They serve as a gateway between the field devices on the H1 links and the HSE backbone. Asset Vision Professional supports the ABB Linking Device LD 800HSE.

FOUNDATION Fieldbus Device Integration, integrates the FOUNDATION Fieldbus architecture and field devices into the Asset Vision Professional environment. The main components of FOUNDATION Fieldbus Device Integration are:

- Fieldbus Builder FOUNDATION Fieldbus
- OPC Server FOUNDATION Fieldbus
- Device Library Wizard
- Device Type Objects



Refer to the following 800xA documents for configuration of FOUNDATION Fieldbus in Asset Vision Professional:

3BDD012902R5021 - Industrial^{IT} 800xA Device Management FOUNDATION Fieldbus Configuration

The document can be found on DVD1 in the Released Documentation\800xA folder. Alternatively, the latest version of the documents can be downloaded from [ABB Solutions Bank](#).

Section 3 PROFIBUS/HART Interface

Overview

Asset Vision Professional supports connectivity to PROFIBUS and HART field devices independent of ABBs control systems. HART Multiplexer and ifak HART modem interfaces are used to communicate with HART devices. ifak PROFIBUS adapter is used to communicate with PROFIBUS devices.



PROFIBUS and HART Device Object Types must be installed separately using Device Library Wizard. Refer to [Section 5, Device Library Wizard](#)

General

In Asset Vision Professional, PROFIBUS and HART devices must be instantiated in the Asset Structure, which is used as pool of preconfigured device instances. Then, these instances are inserted into the Control Structure and are used to communicate with the actual device with preconfigured Device Type Manager (DTMs). It is possible to delete these instances from the Control Structure without losing DTM offline configurations. This will avoid repeat efforts from the user.

Adding Devices to Asset Structure

Perform the following steps to create the instance.

1. Open Asset Vision Professional workplace.
2. Select **Asset Structure** from the structure list.
3. From the Object List, expand the Asset Structure below the Plant Assets object.
4. Right-click Plant Assets category. For example, Field Instruments > Transmitters > Pressure, where the device is to be added and select **New Object**.

5. From the New Object window, select the desired field device.(For example, For ABB 263/265 HART Pressure Transmitters, select **Object Type -> Field Devices -> HART Transmitter -> ABB_253_265_v2_0.**)
 - HART Object Types are located under Field Devices.
 - PROFIBUS Object Types are located under PROFIBUS Devices.
6. Enter an appropriate name for the device.
7. Click **Create**.
8. Repeat steps 5 through 7 for all PROFIBUS and HART devices.

Adding Devices to Control Structure



Field device instance is created under its communication or gateway interface. For example, a HART field device instance can be created under ifak HART modem or HART multiplexer.

PROFIBUS and HART devices are instantiated in the Control structure.

1. Open Asset Vision Professional workplace.
2. Select **Control Structure** from the structure list.
3. From the Object List, expand the Control Structure.
4. Right-click gateway interface, where the device is to be added and select **Insert Object**.
5. In the Insert Object dialog, select Asset Structure and select the previously created instance and click **Insert**.
6. Repeat steps 4 and 5 to add more device instances.

The following sections describes the configuration and operation of PROFIBUS and HART interface in Asset Vision Professional.

Connect/Disconnect Communication Interface

Perform the following steps when HART modem or PROFIBUS adapter interface is disconnected from Asset Vision Professional system, while the fieldbus communication is enabled:

1. Close all the DTM windows.
2. Disable fieldbus communication.
3. Connect the HART modem or PROFIBUS interface to the same USB port.
4. Enable fieldbus communication.

Configuring Is Pro Multiserver



Configure *is Pro Multiserver* using the Asset Vision Professional service account - AVPSERVICE.

Perform the following steps to configure *Is Pro Multiserver*:

1. Select **Start > ifak system > is Pro Multiserver > is OPC Konfigurator**. A screen similar to the one shown in [Figure 30](#) is displayed.

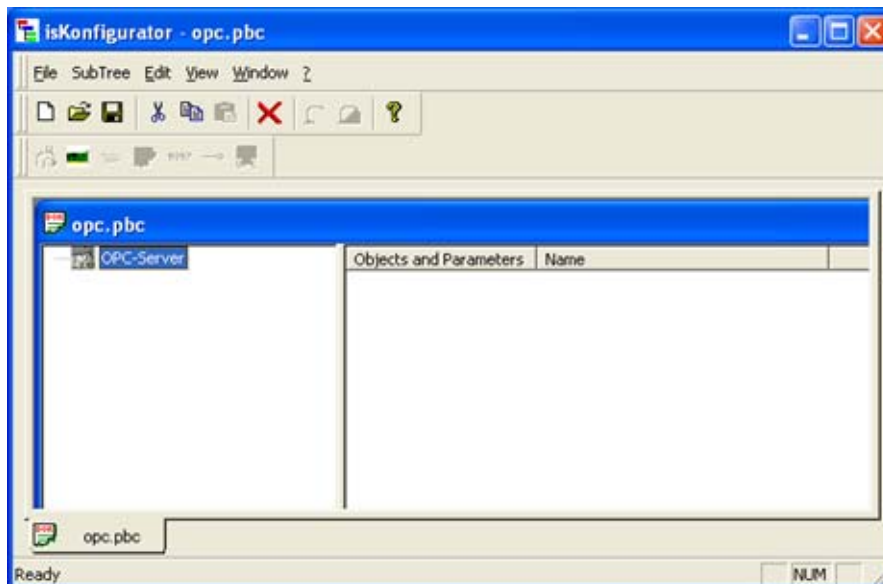


Figure 30. *is Pro Multiserver* Device

2. Right-click **OPC-Server**, which is displayed on the left pane and select **Insert Object**.
3. A pop-up message similar to the one shown in [Figure 31](#) is displayed.

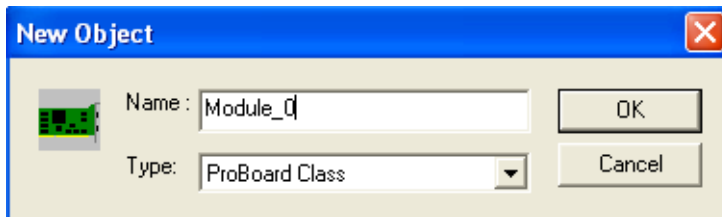


Figure 31. is Pro Multiserver New Object

4. Enter the object name as Module_0 and click **OK**. The object is added below the OPC-Server on the left pane as shown in the [Figure 32](#).

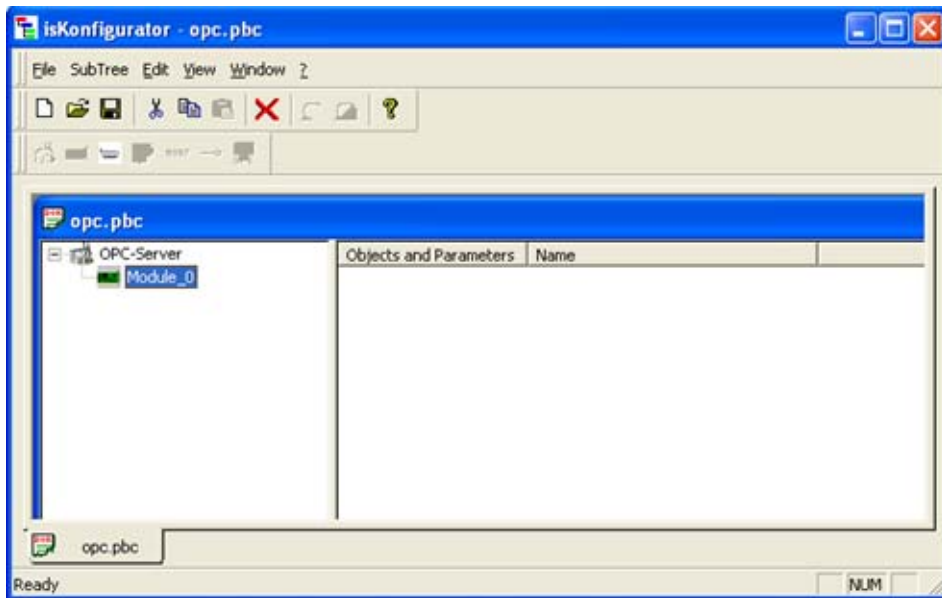


Figure 32. is Pro Multiserver New Object

5. Right-click the Module_0 and select **Properties**. A screen similar to the one shown in [Figure 33](#) is displayed.

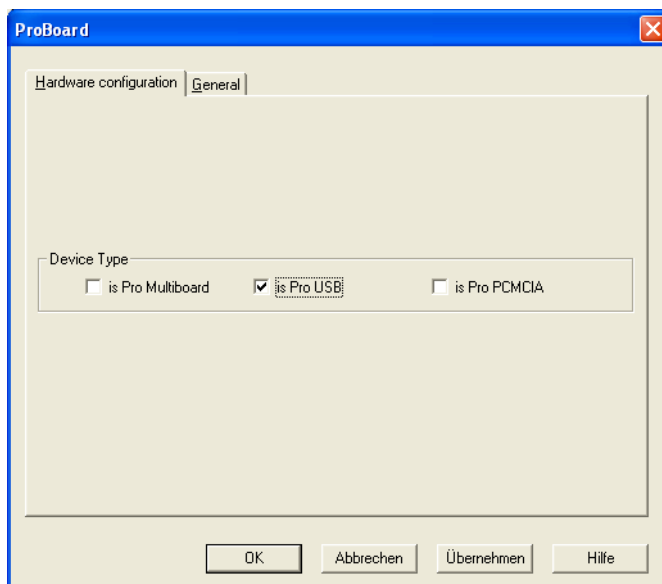


Figure 33. is Pro Multiserver Properties

6. Select **is Pro USB** check box under Device Type and click **OK**.
7. Right-click the Module_0 and select **Insert Object**. A pop-up message, similar to the one shown in [Figure 34](#) is displayed.

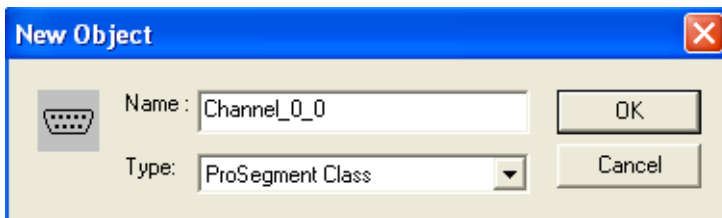


Figure 34. is Pro Multiserver New Object Name

8. Enter the object name as Channel_0_0 and click **OK**. The object is added below Module_0.
9. Right-click the Channel_0_0 and select **Properties**. A screen similar to the one shown in Figure 35 is displayed.

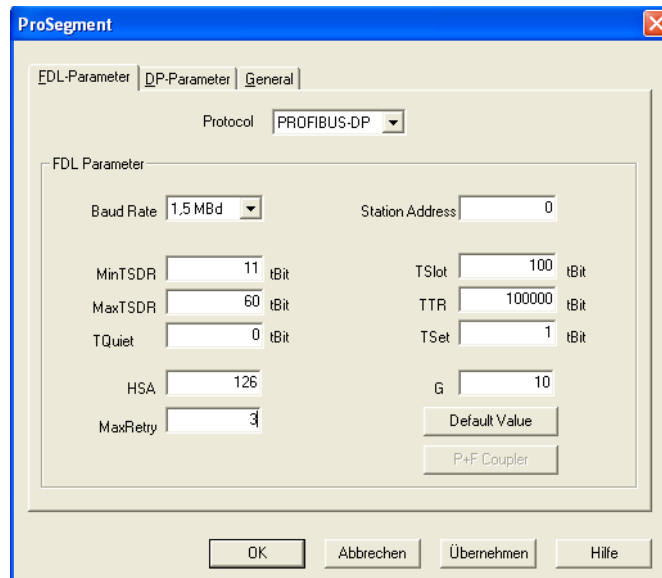


Figure 35. is Pro Multiserver Channel Properties

10. Select the applicable Baud Rate from the drop-down list and click **OK**.
11. Repeat steps 2 to 10 to insert second PROFIBUS adapter with module name Module_1 and channel name Channel_1_0.
12. Save this file with the name "opc.bpc" in the path **Program Files > ifak system > is pro multiserver > bin**.
13. Close isOPC Konfigurator.



Each is Pro USB Adapter can have a maximum of 60 Profibus devices connected.

PROFIBUS Adapter Interface

Once the Asset Vision Professional node is setup, the PROFIBUS ifak is PRO USB Adapter's driver needs to be configured on Windows for the operating system to recognize and communicate with the adapter hardware.



The driver software is installed by the Asset Vision Professional installer.

Post-installation Configuration



Restore **ifak_System_is_Pro_USB Device Object Type** using Device Library Wizard, if the restoration is not completed during the post-installation of Asset Vision Professional Installer. Refer to [Step 4: Install Device Types via Device Library Wizard](#) on page 153 to perform the restore operation.

Configuring Modem Driver

The operating system detects the PRFOIBUS adapter, when it is connected for the first time with the computer. The Found New Hardware Wizard is automatically displayed in a screen, similar to the one shown in [Figure 36](#).



Figure 36. Welcome screen of Found New Hardware Wizard

Select **No, not this time** and click **Next**.

In the resulting screen, similar to the one shown in [Figure 37](#), select the option **Install from a list or specific location (Advanced)** and click **Next**.



Figure 37. Select Installer Location

In the resulting screen, similar to the one shown in [Figure 38](#), select the option **Don't search. I will choose the driver to install.** and click **Next**.

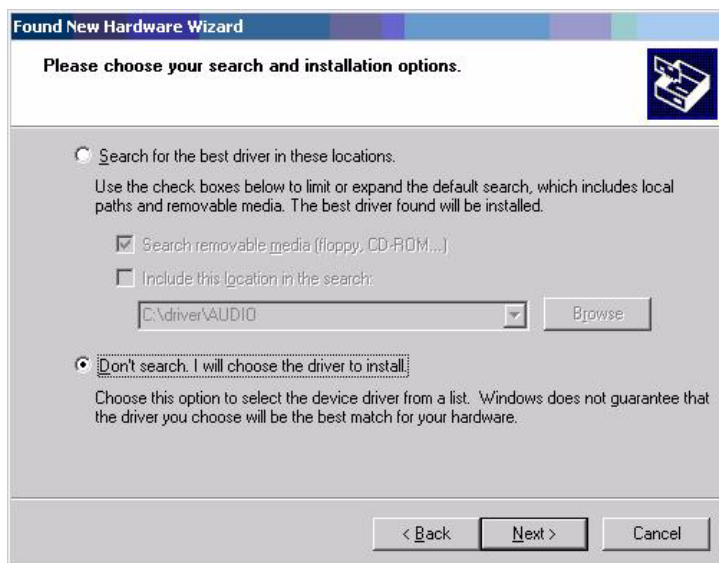


Figure 38. Search and Installation Options

In the resulting screen similar to the one shown in [Figure 39](#), the isPRO USB device driver for the PROFIBUS Adapter is detected automatically. Select this driver and click **Next**.

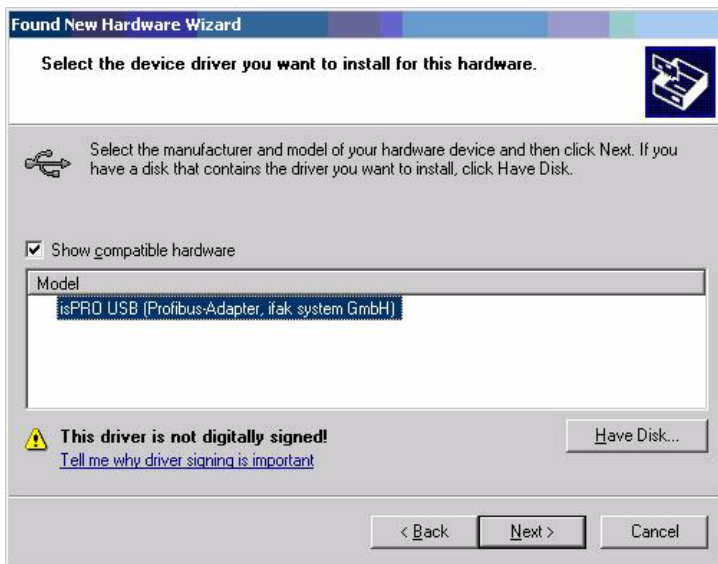


Figure 39. Select Device Driver



The ifak PROFIBUS Multidriver software must be installed, if the isPRO USB driver is to be detected automatically. The installation of this software is performed by the system installer. If this is unlisted, then ifak PROFIBUS Multidriver software must be reinstalled.

When the driver is selected, a warning message is displayed as shown in [Figure 40](#). Click **Continue Anyway**.



Figure 40. Windows Warning

The driver installation proceeds and a screen similar to one shown in [Figure 41](#) is displayed, after the installation is complete. Click **Finish**.



Figure 41. Driver Installation Complete

The ifak PROFIBUS Adapter driver is now installed and is ready for use.

Configuring PROFIBUS Adapter

Asset Vision Professional includes a preconfigured PROFIBUS adapter object that is ready to use after installation. Before connecting devices to the adapter, the communication between the Asset Vision Professional node and the adapter must be verified.

Asset Vision Professional supports simultaneous access to two PROFIBUS adapters, that is, it is possible to configure two PROFIBUS adapters. This section describes a setup for the PROFIBUS adapter.

PROFIBUS Adapter configuration is a two step process.

Step 1: Detect the connected adapter using 'is PRO Configurator'.

Step 2: Configure ifak PROFIBUS Adapter DTM to use simultaneous OPC and DTM connection.



Reserve Asset Vision Professional Network for exclusive modify access.

Adapter Configuration

Step 1

Once the device driver is installed for the adapter, it has to be configured. To configure the adapter, select **Start > ifak System > is PRO Multidriver** and open **is PRO Configurator**. A screen, similar to the one shown in [Figure 42](#) is displayed.

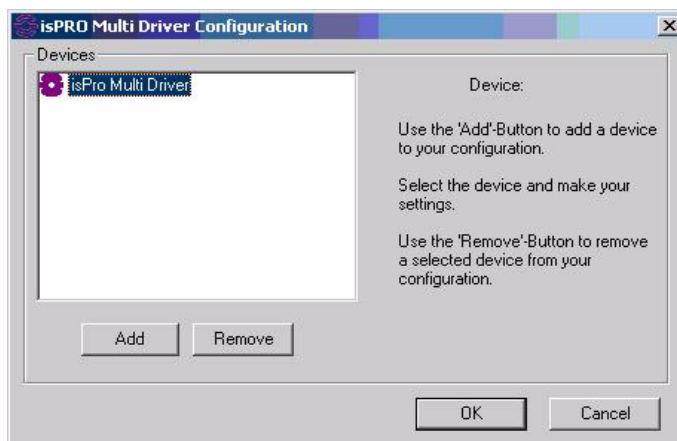


Figure 42. isPro Driver Configurator

Select **isPro Multi Driver** and click **Add**.

In the resulting screen, similar to the one shown in [Figure 43](#), select **USB** option and click **OK**.



Figure 43. Add Device

In the resulting screen, as shown in [Figure 44](#), a USB device is listed in the isPRO Multi Driver. Select the USB device and click **Search attached device**. The attached USB devices pop-up is displayed as shown in [Figure 44](#), which lists the

device id of the PROFIBUS Adapter connected. Select the id of the PROFIBUS Adapter, which is in use and click **Select**.

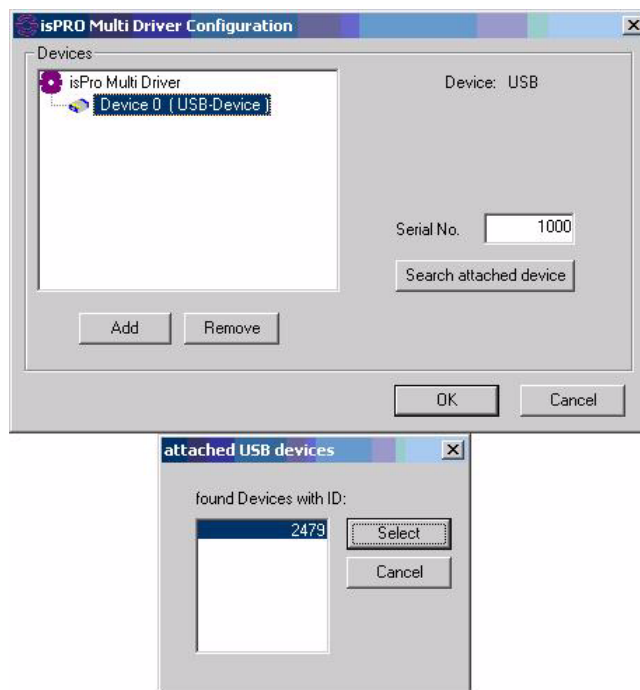


Figure 44. Search Attached Device

The id of the selected adapter is displayed in the **Serial No.** field as shown in Figure 45. Click **OK**.

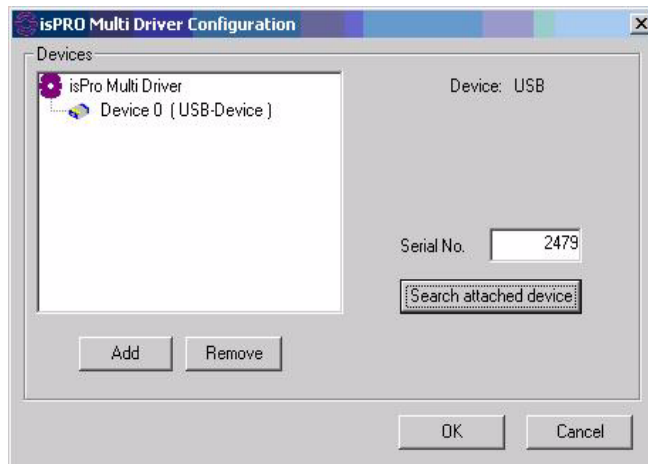



Figure 45. Serial Number Selector

Step 2



Before connecting the devices to the adapter, the communication between the PC and the adapter must be verified.

1. Open Asset Vision Professional Workplace.
2. Select **Control Structure** from the structure list.
3. Right-click on the Asset Vision Professional Network and select **Reserve**.
4. Select **ifak Profibus Adapter** instance under the Asset Vision Professional Network.
5. Select the Device Management aspect from the Aspect list.

6. In the Aspect View, use the View Selector  and select the **Channel Selection view**. A screen similar to the one shown in [Figure 46](#) is displayed.

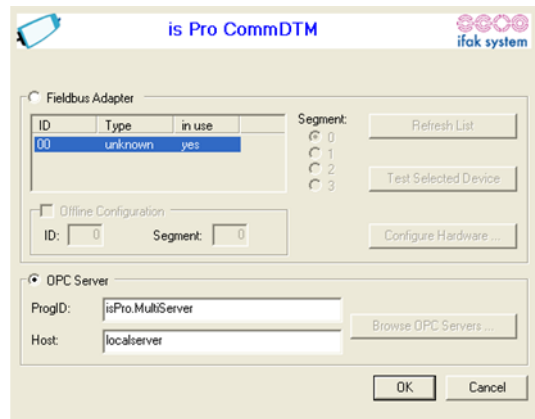


Figure 46. is Pro Comm OPC Server

7. Select the **OPC Server** option.
8. In the **ProgID** field, enter **isPro.MultiServer**.
9. In the **Host** field, enter **localhost**.
10. Click **OK**.

11. Select Offline Parameterize in is PRO USB adapter from is Pro CommDTM. A screen similar to the one shown in [Figure 47](#) is displayed.

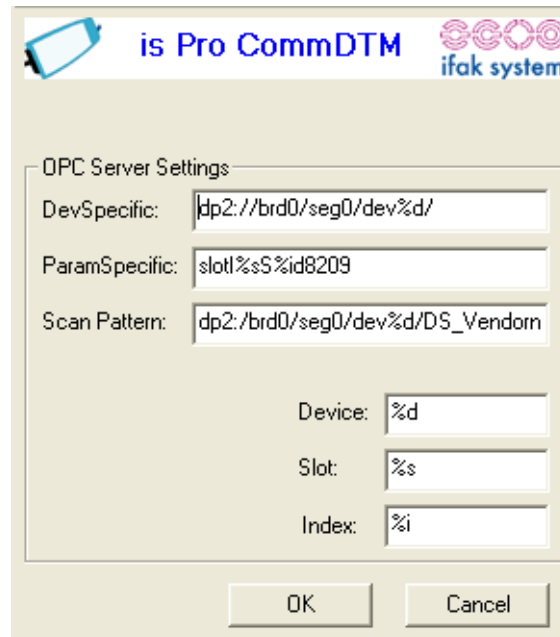


Figure 47. is Pro Comm Server Settings

12. Perform the OPC server settings as follows:
 - DevSpecific setting will be dp2://brd0/seg0/dev%d/
 - Scan Pattern setting will be dp2://brd0/seg0/dev%d/DS_Vendorname
13. Click **OK**.
14. Repeat steps 4 to 13 to configure the second adapter with the following OPC Server settings:
 - DevSpecific setting will be dp2://brd1/seg0/dev%d/
 - Scan Pattern setting will be dp2://brd1/seg0/dev%d/DS_Vendorname
15. Click **Ok**.

Working with PROFIBUS



Unless described otherwise, all configuration steps described throughout this section must be performed in the Configuration Disabled mode.

Enable/Disable Fieldbus Communication



The menu item for both the methods toggles between Enable or Disable Communication depending on the current status. If the menu item reads Enable Communication, then the communication is already disabled and vice versa.



Asset Vision Professional Network must be reserved to Enable/Disable fieldbus communication. **Reserve** option is available in the context menu of any object below Asset Vision Professional Network,

Fieldbus segment must be in offline mode to perform number of actions, such as adding and removing a device from the adapter. There are two ways to Enable/Disable fieldbus communication.

Using Device Function from context menu:

1. Open Asset Vision Professional Workplace.
2. From Control Structure, select the PROFIBUS adapter instance.
3. From the context menu, select **Device Functions**.
4. Select **Enable/Disable Communication**.

Using Fieldbus Management aspect:

1. Open the Asset Vision Professional Workplace.
2. Select Control Structure from the structure list.
3. Select the PROFIBUS Adapter instance.
4. Select Fieldbus Management aspect from the aspect list.
5. In the Aspect View area, right-click **Fieldbus Management**.
6. Select **Enable/Disable Communication**.



The Mode icon at the bottom left of the Aspect View window indicates the current mode.




If the Asset Vision Professional network is reserved by another user, it cannot be reserved again, unless the first reservation is released.



The default communications status for a new installation of Asset Vision Professional or newly created PROFIBUS adapter is Disabled.

Scanning PROFIBUS Devices

1. Open Asset Vision Professional Workplace.
2. Select Control Structure from structure list.
3. Select PROFIBUS Adapter instance under the Asset Vision Professional Network.
4. Enable communication.
5. In the Aspect View, use the View Selector  and select **Device List** from the context menu.
6. In the Device Management screen, click **Update List**.
7. All available devices are listed in the Channel Device List.



Update List operation may take few minutes to complete. The message "update in progress - please wait" is displayed, while the operation is in progress.

If device PNO id is not shown correctly, then increase Max Retry count to 3 in *is PRO Multiserver*.



Asset Vision Professional does not support an automatic method for populating the found devices into the Control Structure. As a result, the devices need to be configured manually.

Adding Devices



It is recommended to create Device Object Type instances in Asset Structure by using **Create >New Object** context menu.



Before adding the device object types, the communication must be disabled and the instance must be made available in the Asset Structure.

Perform the following steps to add device instance to the Control Structure.

1. Open Asset Vision Professional Workplace.

2. Select **Control Structure** from the structure drop-down list.
3. Select the PROFIBUS Adapter object.
4. Ensure that the communication is disabled.
5. Right-click PROFIBUS Adapter object and select **Insert Object**.
6. In the Insert Object pop-up, select the Asset Structure, expand the Asset Structure to locate the device. Once the device is located, select the device and click **Insert**
7. In the resulting DTM pop-up window, provide the tag and address for the device.
8. Repeat steps 6 and 7 to add more PROFIBUS devices.

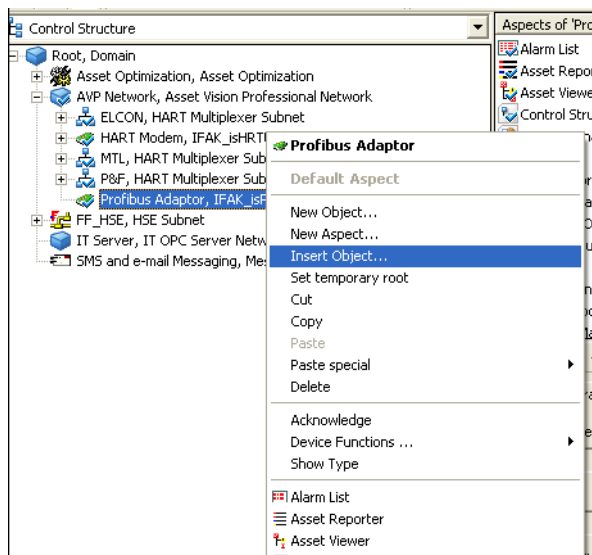


Figure 48. Insert Object

Deleting Devices



Before deleting the device object types, the communication must be disabled.

Perform the following steps to delete device object types from the Control Structure.

- 1. Open Asset Vision Professional workplace.
- 2. Select **Control Structure** from the structure drop-down list.
- 3. Open the substructure below Asset Vision Professional network.
- 4. Select the field device to be deleted from the Control Structure.
- 5. Right-click the device and select **Delete** from the context menu as shown in [Figure 49](#).

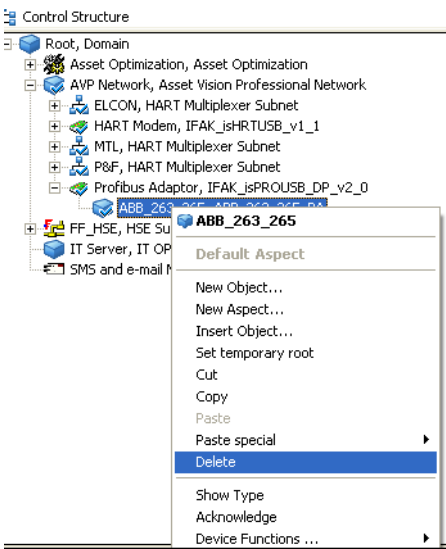


Figure 49. Delete Object



Ensure that the network is reserved before deleting a device.

Configuring and Commissioning of PROFIBUS Device Object

Once the PROFIBUS Device Objects have been instantiated, they can be configured for the application using DTM. A configuration describes the creation of a set of parameters for a particular device in Asset Vision Professional. To configure field device objects, DTMs should be started with the communication disabled. If changes are to be made to the device directly, the communication should be enabled.

Depending on whether the communication is enabled or disabled, the DTM displays various user windows. The enabling or disabling of the device is selected through the Fieldbus Management aspect of the relevant device instance.

A DTM view can be opened in one of the following ways:

1. From Device Management aspect in the Aspect view.
2. From the context menu of Device Functions in Control Structure.



Device specific DTMs can be started using the Device Functions context menu. With these DTMs, the Device Management window has a gray background without any graphic display. The configuration of the device using a DTM is described in the associated DTM documentation and is not included in this documentation.

When all PROFIBUS Device Objects configuration is complete, the data records for the relevant device or selection of devices can be:

- verified,
- loaded to the device/selection of devices,
- saved in one or more export file(s).

These functions are executed using the Fieldbus Management Aspect and its subconditions. Aspect Instance data is verified and is exported with the Fieldbus Management in Communication enabled mode. In order to send completed device configuration to device, select the device in Fieldbus Management aspect and select **Download Device** from the context menu of the Fieldbus Management aspect.

Verify

Select the verify option in the Fieldbus Management aspect control menu. Compare the online device data with the stored offline Asset Vision Professional configuration data set. If the data set match, the result is true, else the result is false.



If the verification result is false, an upload or download is recommended for data synchronization.

Download and Upload

When several devices are selected, the PROFIBUS/HART Fieldbus Builder starts a batch process for upload or download, which is processed sequentially. Execution of the batch process continues even if errors occur in individual DTMs. Each event (faulty/successful execution) is documented in the Fieldbus Management status window. If an error occurs, an error message is displayed after the end of the batch process to indicate that the batch process is faulty.



Loading errors can arise, if this function is not supported by the DTM, or if the DTM cannot establish a connection to the device.

Export and Import

The export file of an instance data record is saved with a time stamp in a folder, which is specific to the Device Object. This makes it possible to build a device configuration history. Exported device data set can be imported again by selecting the specific export file. The export and import process is carried out manually by the user.

HART Modem Interface

Once the Asset Vision Professional node is setup, the HART modem driver needs to be configured on Windows for the operating system to recognize and communicate with the modem..



Restore **ifak_System_is_HRT_USB Device Object Type** using Device Library Wizard, if the restoration is not completed during the post-installation of Asset Vision Professional Installer. Refer to [Step 4: Install Device Types via Device Library Wizard](#) on page 153 to perform the restore operation.



The driver software is installed by the Asset Vision Professional installer.

Configuring Modem Driver

When the HART Modem is connected to the computer for the first time, the operating system detects a new hardware. The Found New Hardware Wizard automatically starts as shown in [Figure 50](#).



Figure 50. Welcome screen of Found New Hardware Wizard

Select **No, not this time** and click **Next**.

In the resulting screen, similar to the one shown in [Figure 51](#), select the **Install from a list or specific location (Advanced)** option and click **Next**.

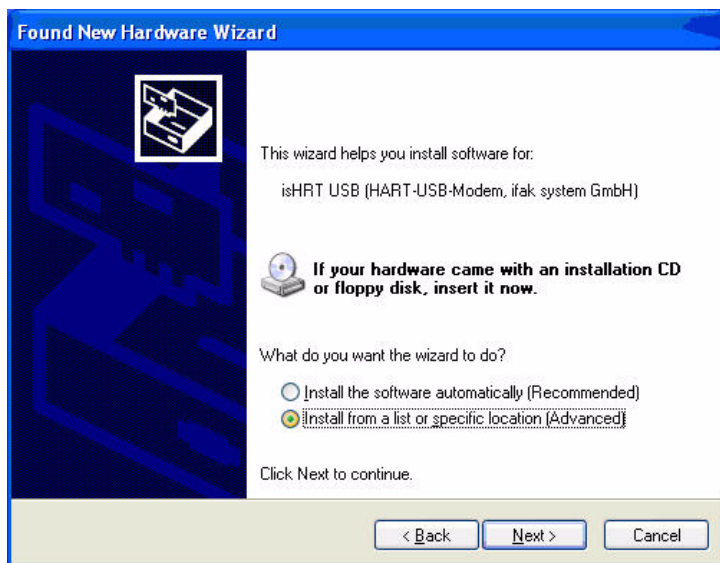


Figure 51. Select Installer Location

In the resulting screen, similar to the one shown in [Figure 52](#), select the **Don't search. I will choose the driver to install** option and click **Next**.

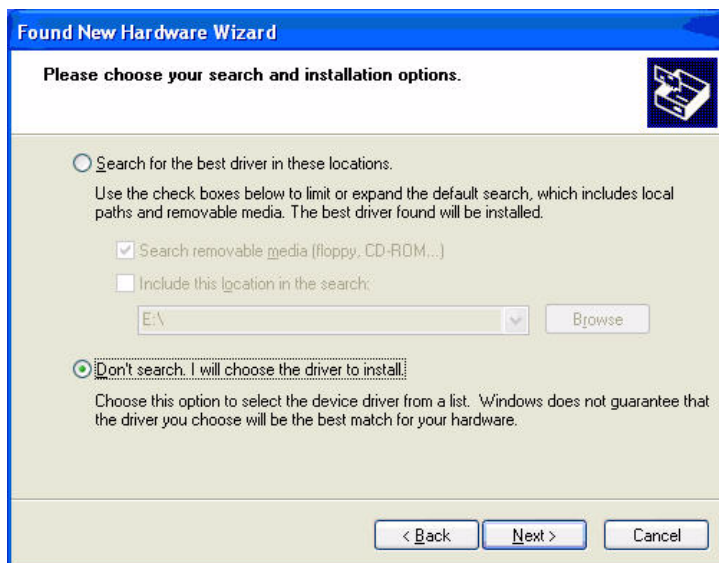


Figure 52. Search and Installation Options

In the resulting screen similar to the one shown in Figure 53, the isHRT USB device driver for the modem is detected automatically. Select this driver and click **Next**.

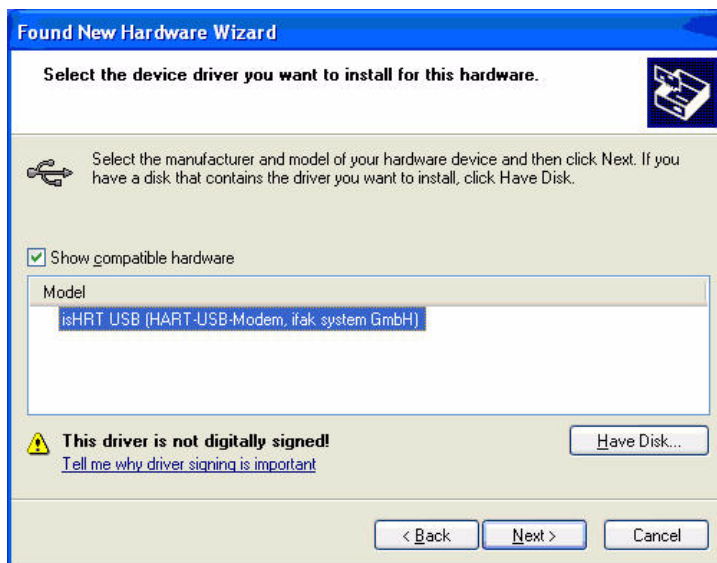


Figure 53. Select Device Driver



For the isHRT USB driver to be detected automatically, ifak HART Multidriver software must be installed. The installation of this software is done by Asset Vision Professional installer. If this is unlisted, then ifak HART Multidriver software must be reinstalled.

When the driver is selected a warning message is displayed in a screen, similar to the one shown in [Figure 54](#). Click **Continue Anyway**.



Figure 54. Windows Warning

The driver installation proceeds and a screen similar to the one shown in [Figure 55](#) is displayed after the installation is complete. Click **Finish**.

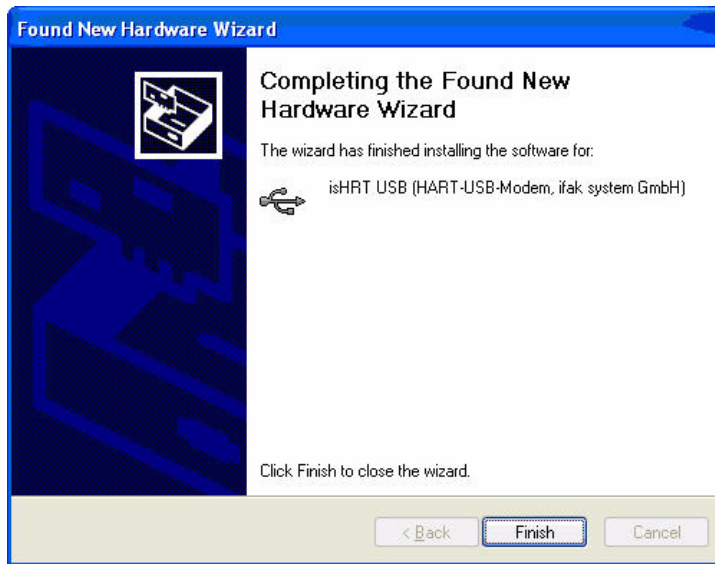


Figure 55. Driver Installation Complete

Configuring HART modem

Asset Vision Professional is capable of setting up a HART communication with both the HART modem and the multiplexer. This section describes the setup for the HART modem.

Asset Vision Professional includes a preconfigured HART modem object that is ready to use after installation. Before connecting the devices to the modem, the communication between the Asset Vision Professional node and the modem must be verified.

HART modem configuration is a two step process.

Step 1: Use is HRT Configurator to detect the connected modem.

Step 2: Use ifak HART modem DTM.

Connecting the HART modem

Step 1

Once the device driver is installed for the modem, the modem has to be configured. Select **Start > ifak System > is HRT Multidriver**. A screen, similar to the one shown in [Figure 56](#) is displayed.

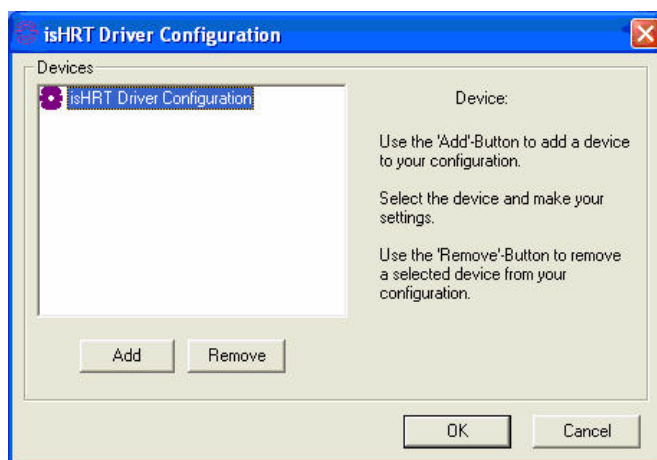


Figure 56. isHRT Driver Configurator

Select **isHRT Driver Configuration** and click **Add**.

In the resulting screen, similar to the one shown in [Figure 57](#), select the **USB** option and click **OK**.

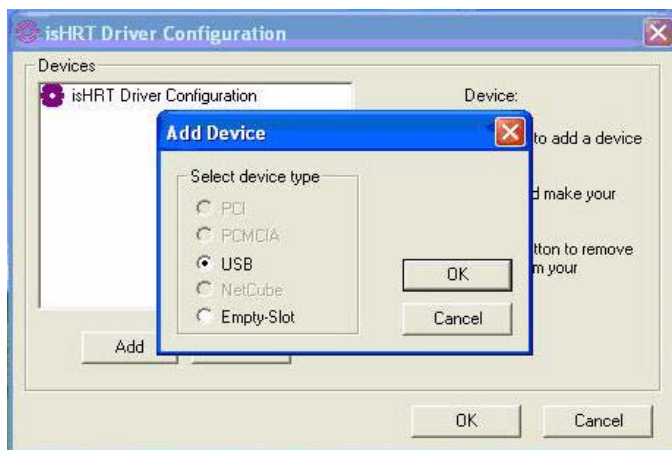


Figure 57. Add Device

In the resulting screen, as shown in [Figure 58](#), a USB device is listed in the isHRT Configurator. Select the USB device and click **Search attached device**. The attached USB device pop-up is displayed, which lists the device id of the HART

modem connected. Select the id of the HART modem, which is in use and click **Select**.

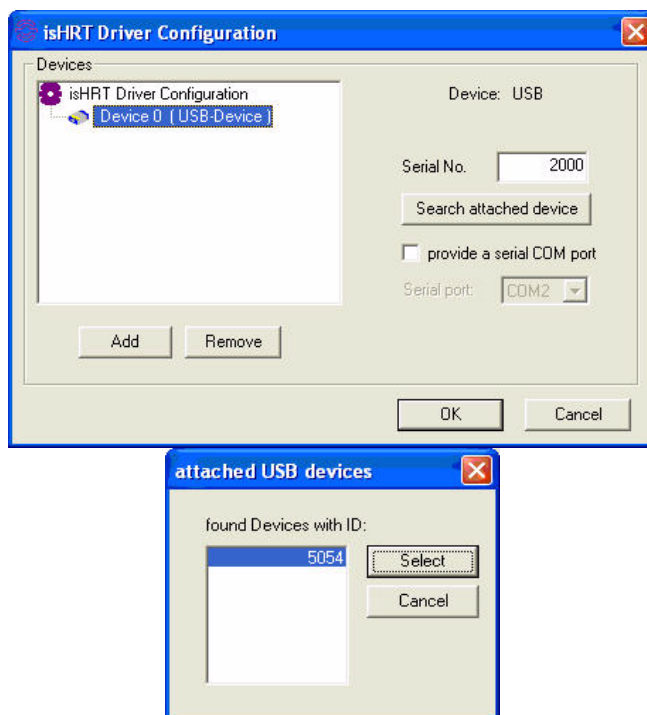


Figure 58. Search Attached Device

The id of the selected modem is displayed in the Serial No. field as shown in Figure 59. Click **OK** to continue.

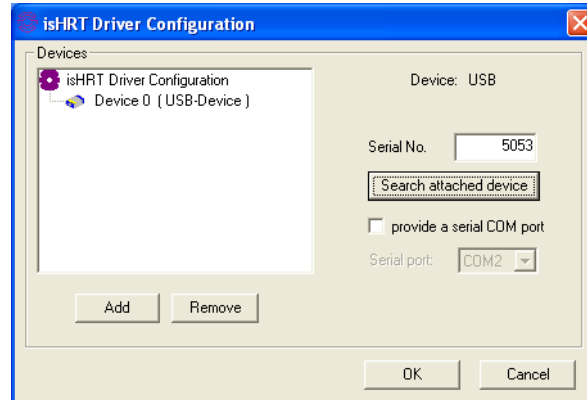



Figure 59. Serial Number Selector

This completes the configuration of the HART Modem.

Step 2

1. Open the Asset Vision Professional workplace.
2. Select the Control Structure from the structure list.
3. Right-click on the Asset Vision Professional Network and select **Reserve**.
4. Expand the Asset Vision Professional Network.
5. Select the HART Modem instance.
6. Select **Device Management Aspect** from the Aspect List.
7. In the Aspect View, from the View Selector  select the Driver Configuration view.

8. Click Refresh List and verify that the modem serial number is displayed in the list of connected is HRT devices window area.

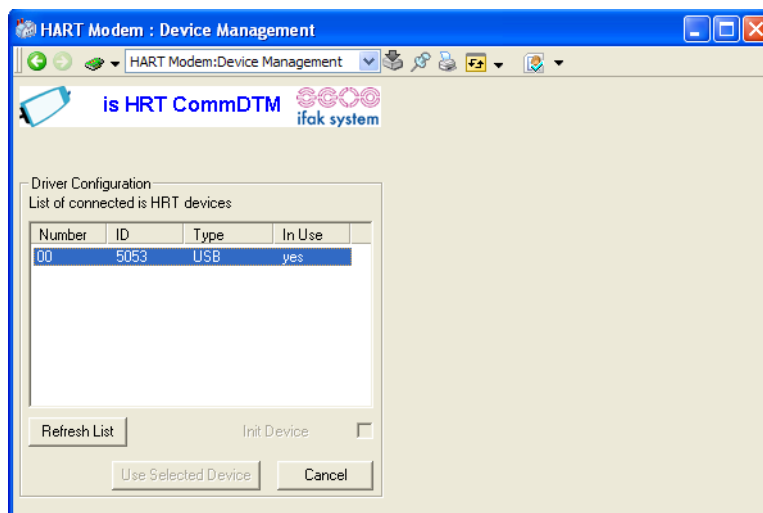


Figure 60. Driver Configuration

Working with HART



Unless described otherwise, all configuration steps described throughout this section must be done in the Configuration disabled mode.

Enable/Disable Fieldbus Communication



The menu item for both the methods toggles between Enable or Disable Communication depending on the current status. If the menu item reads Enable Communication, then the communications is already disabled and vice versa.

Fieldbus segment must be in offline mode to perform number of actions, such as adding and removing a device from the adapter. There are two ways to Enable/Disable fieldbus communication.

Using Device Function from context menu:

1. Open Asset Vision Professional Workplace.
2. From Control Structure, select the HART modem instance.
3. From the context menu, select Device Functions.
4. Select **Enable/Disable Communication**.

Using Fieldbus Management aspect:

1. Open the Asset Vision Professional Workplace.
2. Select Control Structure from the structure list.
3. Select the HART modem instance.
4. Select Fieldbus Management aspect from the aspect list.
5. In the Aspect View area, right click Fieldbus Management.
6. Select **Enable/Disable Communication**.



The Mode icon at the bottom left of the Aspect View window indicates the current mode.



If the Asset Vision Professional network is reserved by one user, another user cannot reserve it, until the first reservation is released.



The default communications status for a new installation of Asset Vision Professional or newly created HART modem is Disabled.

Scanning HART Devices

1. Open the Asset Vision Professional workplace.
2. Select the Control Structure from the structure list.
3. Select the HART modem instance under the Asset Vision Professional Network.
4. Enable communication.
5. Right-click on **Device Management Aspect** and select **Device List** from the context menu.

6. Click **Update list** from the Device Management pop-up.

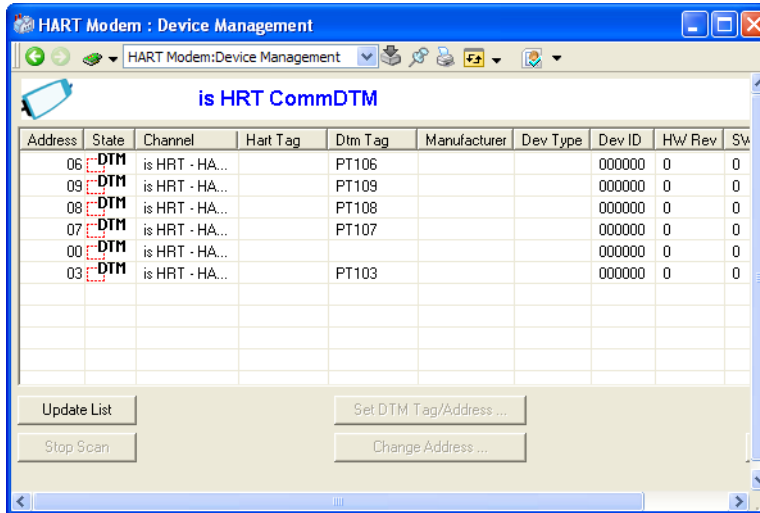


Figure 61. Update List

7. All the field devices connected on HART fieldbus segment are detected and listed in the Channel Device List table as shown in Figure 61.



Update List operation may take a few minutes to complete. The message "update in progress - please wait" is displayed while the operation is in progress.






Asset Vision Professional does not automatically populate the found devices into the Control and Asset Structures. As such, the devices need to be manually added.

If the Modem DTM is called in an offline mode, the List of HART Devices provides a list of configured devices. The State field is used to display an icon, that reflects the state of device configuration.

Table 1 shows the icons used in Device List.

Table 1. Icons, used in Device List

Icon	Content
	<p>This icon represents an instantiated device object in the Asset Vision Professional system, which is not associated to any physically existing HART device.</p> <p>This icon only appears, if more than one HART device is configured in the Asset Vision Professional Workplaces Control Structure to a specific channel, supporting multi-drop mode.</p> <p>For changing the polling address of the specific object, use the Set DTM Tag/Address button.</p>
	<p>This icon represents a physically existing HART device, identified from the device scan Refresh.</p> <p>Changing the polling address of the physical device hardware use the Set Change Address button.</p>
	<p>This icon represents an instantiated device object, which is configured and assigned to a physically existing HART device.</p>

Adding Devices

- 1. Open the Asset Vision Professional workplace.
- 2. Select the Control Structure from the structure list.
- 3. Select the modem object.

4. Ensure that the modem communications are disabled.
5. Right-click the modem object and select **Insert Object**.
6. From the Insert Object pop-up, select **Asset Structure** and expand the structure to locate the device and select the device (Ex: PT-404)



Unique address must be assigned to a device in multi-drop configuration. Only, addresses between 1 to 15 can be used.

7. Click **Insert**. A screen similar to the one shown in [Figure 62](#) is displayed.

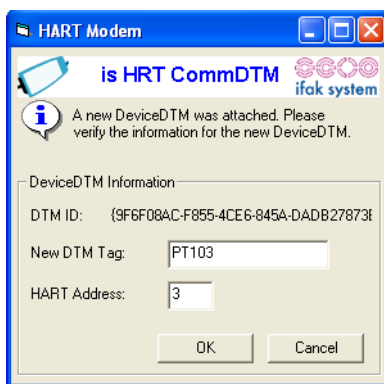


Figure 62. Insert HART Device Object

8. Enter the DTM tag and HART address in the respective fields and click **OK**.
9. For a multi-drop HART device network, repeat steps 5 through 8 for up to 15 connected HART devices.

Setting HART Device Tag and Address

HART modem DTM allows modification of the HART device configuration. The Set DTM Tag/Address button is only available if the modem DTM is in offline mode (Communication disabled) and exactly one device object, which is assigned to a multi-drop address, is selected in the list. To modify the DTM Tag and Address of configured device,

1. Select **Device List** from view selector drop-down menu.

2. Click **Set DTM Tag/Address**.
3. Enter a new DTM Tag and HART Device Address and click **OK**.

Setting HART Device Poll Address

The **Change Address** button is only available if the DTM is in online mode (Communication enabled) and exactly one physical HART device, which is set to a poll address, is selected in the list



When two devices with same poll address are connected to HART modem, only one device, which responds first, is detected by the HART modem.

1. Select **Device List** from view selector drop-down menu.
2. Select the online device for which the poll address has to be changed, and click **Change Device address**. A screen, similar to the one shown in [Figure 63](#) is displayed.

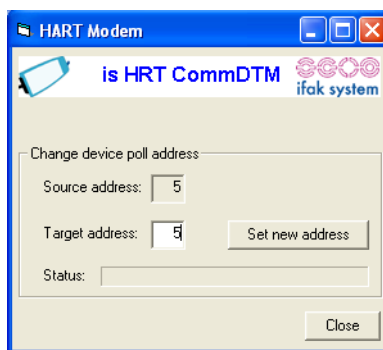


Figure 63. Change Device Address

3. In the Slave Configuration dialog, see [Figure 63](#), enter the target address and click **Set New Address**.

Deleting Devices

Deleting device objects can only be made in Communication Disabled mode.

Perform the following steps to delete the field device from the Control Structure:

1. Open Asset Vision Professional workplace.
2. Switch to the Control Structure.
3. Right-click Asset Vision Professional Network and select **Reserve**.
4. Open the substructure below the Asset Vision Professional Network object.
5. Right-click on the field device to be deleted in the Control Structure and Select **Delete** from the context menu.

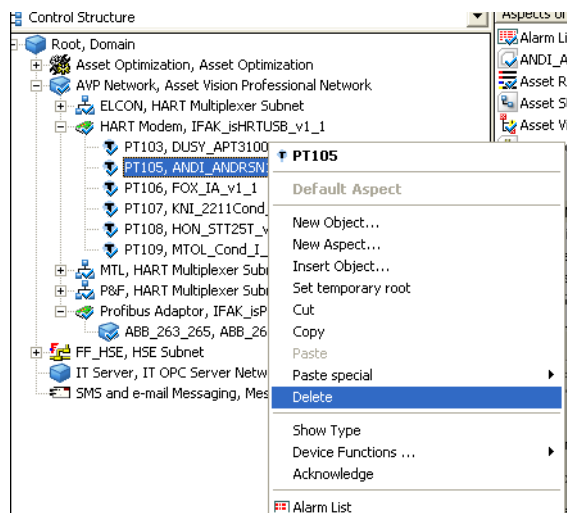


Figure 64. Delete Device Object


PROFIBUS/HART OPC Server data access



Simultaneous access to device data via device DTM and OPC Server is not supported for HART modem configuration. It is not possible to connect to the device when both fieldbus branch is online and PH OPC Server service running.

PH OPC Server provides OPC access to field device data. PH OPC Server comes as preconfigured service with Asset Vision Professional. By default, PH OPC Server service is not running. This service must be running to access the OPC data. The

service can be started from Service Structure. Before starting service, select Fieldbus Management Aspect and perform Configure OPC Server.



The service provider name can be found under **Service Structure > Services > OpcDA_Connector > SG_AVP Network**.

The name used here is OPCDA_Provider_<NodeName>

Select **Enabled** check box to start the service as shown in [Figure 65](#).

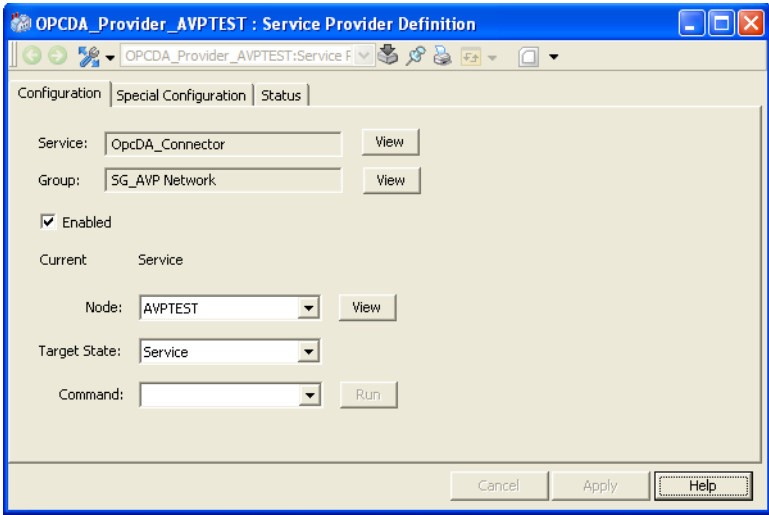


Figure 65. Start PH OPC Server service

Once the service is started, subscribe the OPC data from Control Connection aspect on the device instance.

Configuring and commissioning of HART Device Objects

Once the HART Device Objects have been instantiated, they are configured for the application via DTM. A configuration describes the creation of a parameter set for a particular device in Asset Vision Professional.

DTMs can be started in Communication disabled mode to configure field device objects or, if changes are to be made directly in the device, in Communication enabled mode. Depending on the mode, the DTM appears with various functional windows. The various modes are selected via the Fieldbus Management aspect of the relevant device object.

A DTM view can be opened in one of the following ways:

1. From Device Management aspect in the Aspect view
2. From the context menu of Device Functions in Control Structure



Device specific DTMs can only be started via the Device Functions context menu. With these DTMs, the Device Management window has a gray background without any graphic display. The configuration of the device via a DTM is described in the associated DTM documentation and is not included in this documentation.



It is not recommended to connect DTM and Meriam calibrator simultaneously with the same device. This may lead to unexpected behavior of DTM or the calibrator.

When all HART Device Objects are configured, the data records for the relevant device or selection of devices can be

- verified,
- loaded to the device/selection of devices,
- saved in one or more export file(s)

These functions are executed via the Fieldbus Management Aspect and its subconditions. Instance data can be verified and exported with the Fieldbus Management in Communication disabled mode, but loading is only possible in Communication enabled mode. In order to load fieldbus lines, select the line via the context menu of the Fieldbus Management and then click **Download selection** to start.

Verify

Select the verify option in the Fieldbus Management aspect control menu. Compare the online device data with the stored offline Asset Vision Professional configuration data set. If the data set match, the result is true, else false.



If the verification result is false, an upload or download is recommended for data synchronization.

Download and Upload

When several devices are selected, the PROFIBUS/HART Fieldbus Builder starts a batch process for upload or download, which is processed sequentially. Execution of the batch process continues even if errors occur in individual DTMs. Each event (faulty/successful execution) is documented in the Fieldbus Management status window. If an error occurs, an error message is displayed after the end of the batch process to indicate that the batch process is faulty.



Loading errors can arise, if this function is not supported by the DTM, or if the DTM cannot establish a connection to the device.



HART modem DTM does not update the disconnected status of HART modem while upload is in progress.

Export and Import

The export file of an instance data record is saved with a time stamp in a folder which is specific to the Device Object. This makes it possible to build a device configuration history. Exported device data set can be imported again by selecting the specific export file. The export and import process is carried out manually by the user.

HART Multiplexer Interface

The HART Multiplexer interface, enables communication between HART devices already connected to the Asset Vision Professional. This offers the possibility to integrate large number of field devices through single interface for continuous monitoring.

The minimum requirements to establish the HART communication between the devices and the Asset Vision Professional are:

- HART devices are connected via Multiplexer to Asset Vision Professional (RS232/RS485)
- Asset Vision Professional is installed and licensed

Two communication DTMs build up the base for the HART device integration via the Multiplexer:

- **HART Subnet DTM**
includes the HART Server from HART Communication Foundation (HCF)
- **HART Mux DTM**
is used to represent the Multiplexer devices of the HART network.

A Multiplexer is an addressable piece of equipment that connects to a network. It may have additional connection modules called panels. Ultimately, it bridges communication between the controlling network and multiple instruments attached via a channel.

The following HART Multiplexers are supported:

- Pepperl & Fuchs: KFD2-HMM-16
- MTL: MTL4840 Series
- Elcon: Series 2700-G



Elcon Series 2700-F Multiplexer is not supported in Asset Vision Professional 5.0 SP2.

The supported infrastructure depends on the used Multiplexer type. [Table 2](#) shows the supported Multiplexers.

Table 2. Supported Multiplexers

Vendor	Multiplexer Type	Channels	Module Support
Pepperl&Fuchs	KFD2-HMM-16	255	no
MTL	MTL4840	0	yes

Table 2. Supported Multiplexers (Continued)

Elcon	Series 2700	32	no
-------	-------------	----	----



This is applicable only if USB to Serial converter is used to connect the multiplexer.

Do not disconnect USB to Serial converter while the HART server is configured and running. Disconnecting of the converter will require a restart of Asset Vision Professional node to establish online communication with multiplexer.

Additional Requirements

The operation of the HART Multiplexer package requires the installation of the HART Server version 2.1.1, which is performed during installation of the Asset Vision Professional.



The user must have Windows Administrator rights to configure the HART Multiplexer. Windows Administrator rights are not needed to access online data from HART devices and for device configuration.

Functionality

The Communication DTMs of the HART Multiplexer interface are implemented according to Field Device Tool (FDT) 1.2 including the following:

Multi User support

The DTM supports multi-user scenarios according to the FDT specification by Locking/Unlocking the data set and exchanging the data set changes using the FDT/DTM-Mechanism.

Audit Trail

The HART Multiplexer interface with its Communication DTMs, support Audit Trail sessions according to the FDT specification. The following Audit Trail events are issued:

- Change of parameter
- Change of online state

- Call of functions

User Roles

The Communication DTMs checks for the user rights when an application starts. Access to some application are restricted for certain users. If access to an application is permitted, a distinction is made between restricted access (read-only) and full access (read and write) to its functions.

Table 3 shows the user roles and the applications accessible based on the user roles.

Table 3. User Role Access.

Applications	User Roles		
	Maintenance Technician	Maintenance Supervisor	Maintenance Engineer
List of HART Devices	R	R	R/W
List of Multiplexer	R	R	R/W
HART Channel Configuration	-/-	-/-	R/W
Host Selection	-/-	-/-	R/W
About	R	R	R

-/- = The user interface is not available for selection

R = Data output only (read)

R/W = Data input (write) and output (read)

In addition to the above mentioned roles, if the user has administrator, OEMservice rights or the observer role, then the user can grant unrestricted access to all applications.

HART Server

The HART Server acts as the interface between the system software and the underlying physical HART network including Multiplexers, connection panels, channels and devices. The HART Server user interface is used to configure and to manage the physical components that comprise a HART server hierarchy.

The configuration of a HART device is done with Asset Vision Professional via device specific DTM.

The HART Server is included in the installation routine of Asset Vision Professional.



Configuration of HART Multiplexer topology in HART Server must be done using the AVPSERVICE login.

HART Server Overview

The HART Server provides a user interface that is similar to the one used in Windows Explorer, so most features of the interface must be familiar. The window features are as follows:

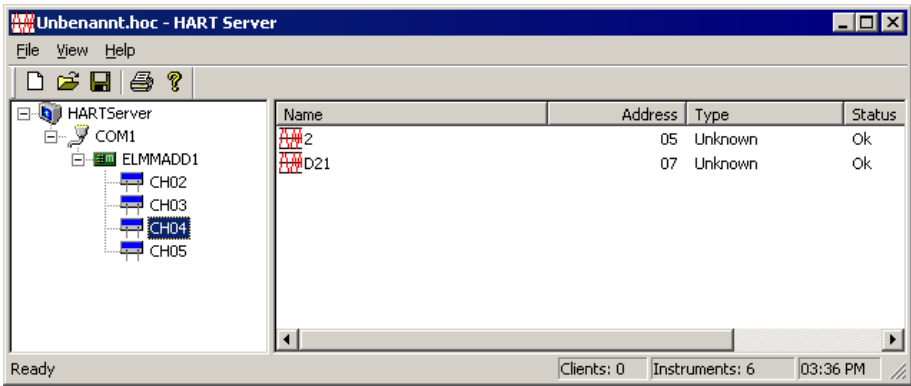


Figure 66. HART Server

The user interacts with the equipment on the networks through a tree control in the left pane and a list control in the right pane. Context menus are used to configure the network.

Tree and List Controls

The first item in the tree control is its root, the HART Server icon. This icon represents the running application. Under the HART Server icon is a hierarchical representation of the physical components the server manages (networks,













Multiplexers, connection panels and channels). Just as individual files do not appear in the Windows Explorer tree control, individual instruments do not appear in the HART OPC Server tree control.

The list control displays information about the children of the selected item in the tree control. The information is shown under four columns: Name, Address, Type, and Status.

Items in the list are sorted by name or address, simply by clicking on the appropriate column heading. The width of columns is adjustable, and the column widths are saved when the server is shut down.

[Table 4](#) summarizes the types of entries in the tree and list.

Table 4. Icons in HART Server

Tree Selection (Left Pane)	Description	Right Pane Displays
 Hart Server	The highest level of the tree control. Represents the whole system. The root node of the tree.	 Networks
 Network	Any connected network of instrumentation. Normally a serial port on the server, but, in the future, it could be a TCP/IP or other LAN connection.	 Multiplexers  Instruments Dependent upon network support
 Multiplexer	Representation of a hardware component that is attached to the network	 Panels  Channels Dependent upon network support
 Panel	Representation of a hardware component that is attached to a multiplexer.	 Channels
 Channel	Representation of a hardware component that is attached to a multiplexer or panel.	 Instruments

Detailed information is described in the HART Servers online help, accessible via the help menu inside the tool.

HART Server Configuration

Perform the following steps to configure the HART Server:

1. Run the HART Server by clicking the **hartopc.exe** located at **c:\Program Files\ABB Industrial IT\Engineer IT\DTM\HART Multiplexer**

Connect\HART Server. A screen, similar to the one shown in [Figure 67](#), is displayed.

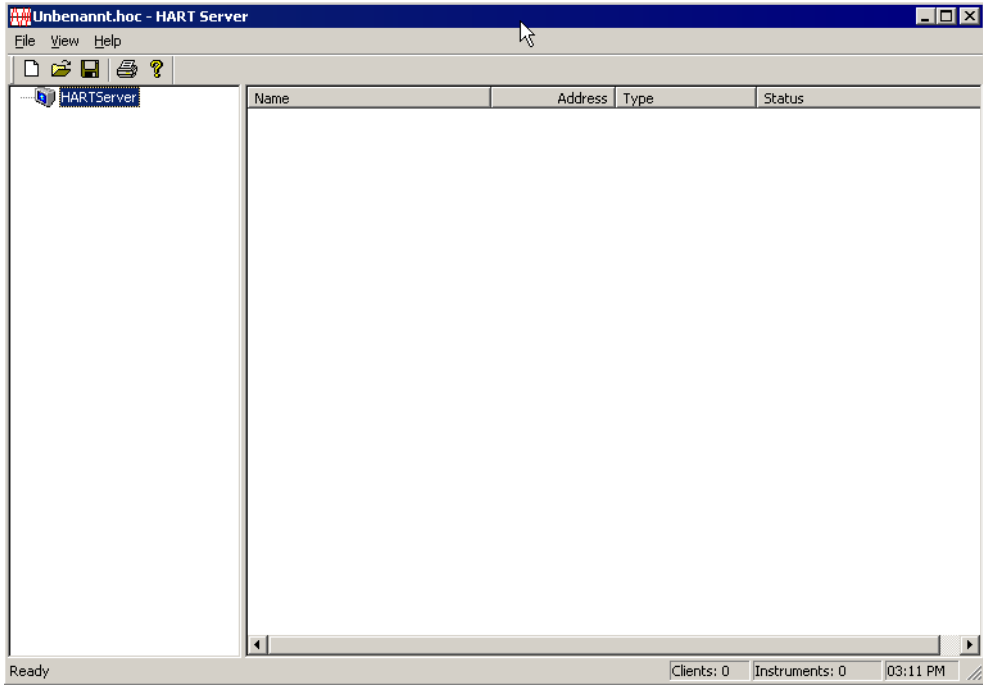


Figure 67. HART OPC Server

- 2. Right-click the root node **HART Server**.

3. Select **Add Network**. A screen, similar to the one shown in [Figure 68](#) is displayed.

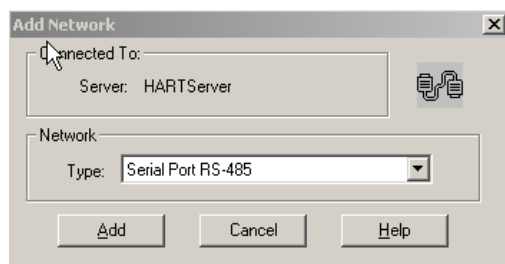


Figure 68. Add Network

4. Select any of the two networks type from the drop-down menu identified as Type.
 - Serial Port RS-485
Supports RS485 communication with HART Multiplexers.
 - Single Serial Port
A single RS232 connection to a HART modem that supports multidrop operation.
5. Click **Add**.
6. Enter a network name.



This name must be included in the HART Subnet DTM, which is described in [HART Server Configuration](#) on page 97. Remember the name for later Asset Vision Professional configuration.

7. Enter correct COM Port and baud rate (Should match with the baud rate of the Multiplexer hardware). Entries shown in the [Figure 69](#) below, are typically valid for most PC connections.

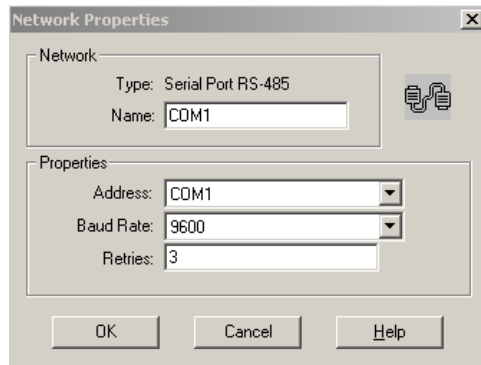


Figure 69. Network Properties

8. Click **OK**.



Repeat Steps 2 to 8 to connect any additional multiplexer networks to Asset Vision Professional.

The network is added to the HART Server.

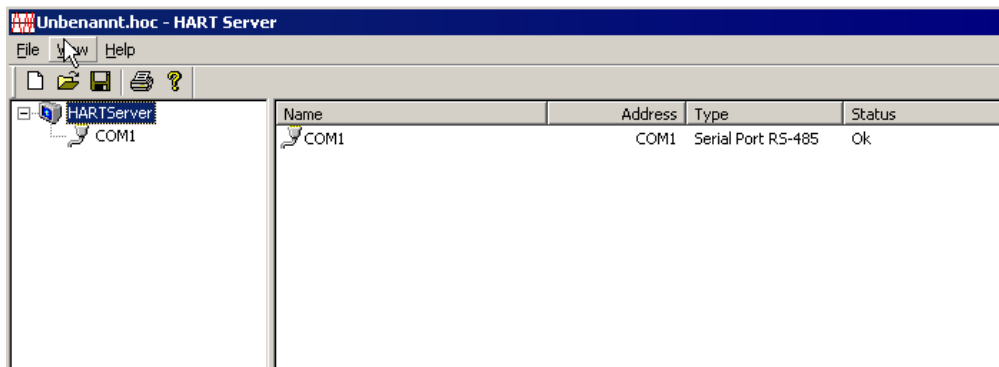


Figure 70. Network View

9. Select the new network node below the HART Server node (COM1 in the example).
10. Right-click and select **Learn**. This scans the network for the available Multiplexer and lists them in a screen, similar to the one shown in Figure 71. Example: If a Pepperl & Fuchs Multiplexer is connected to the network, it will be found and added to the network.



Step 10 is very important as the HART Mux DTM relies only on the HART Server for the connectivity to the network. If the HART Server fails to find the Multiplexer on the network, the HART Mux DTM cannot work properly. In such case, check the properties of the network as well as the installed wiring and hardware.



It is strongly recommended to stop the **Learn** process after detecting Multiplexers, and in case of MTL Multiplexer, stop the **Learn** process after detecting MTL panels.

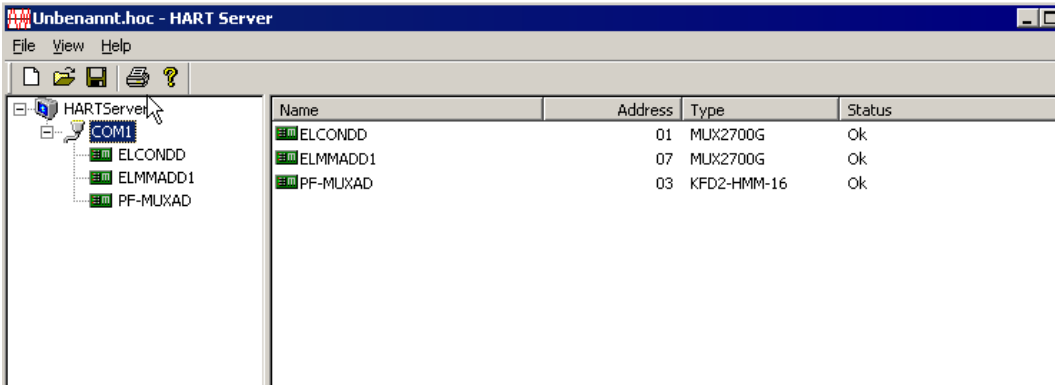


Figure 71. Scanned and Found Multiplexer

The found Multiplexer can now be enquired for available devices.



Refer to [Enabling Slaves in Pepperl & Fuchs Multiplexer](#) on page 129. This describes how to enable the slave modules in P&F Multiplexer.

11. Select a Multiplexer.
12. Right-click and select **Learn**. This scans the Multiplexer channels and list the devices connected.



Steps 10 and 11 needs to be performed on as many Multiplexers are found during the learn sequence.



Errors in communication and configuration need to be solved before going ahead with the HART Mux DTM configuration. If no Multiplexer is found in the network by the HART Server, the communication cannot be established from the Asset Vision Professional node. In this case check wiring, hardware and installation.

The screenshot shows the 'AZ200 Test.hoc - HART Server' window. On the left is a tree view under 'HARTServer' with a 'COM1' port. It lists six 'ELCON' devices (ELCON1 to ELCON6) and one 'MTL' device. The 'MTL' device is expanded, showing seven 'Panel' devices (Panel 02 to Panel 07) and three 'PFH' devices (PFH1, PFH2, PFH3). On the right is a table with columns: Name, Address, Type, and Status.

Name	Address	Type	Status
Panel 02	2	4842	Ok
Panel 03	3	4842	Ok
Panel 04	4	4842	Ok
Panel 05	5	4842	Ok
Panel 06	6	4842	Ok
Panel 07	7	4842	Ok

Figure 72. List of the HART devices on different channels

Setting up a Fieldbus Topology for HART Multiplexer

Asset Vision Professional is capable of setting up a HART communication with both HART modems and multiplexers. This section describes a sample set-up for the HART multiplexer which is performed using both the Asset and Control structures. HART devices are instantiated only in the Asset structure, which serves as a database repository for all devices in a plant. The HART devices are then inserted into and removed from the Control structure, where communication is established between the multiplexer and the device.

Asset Vision Professional includes 3 preconfigured HART multiplexer objects that are ready to use after installation. Before connecting devices to the multiplexer, the

communication between the PC and the multiplexer must be verified as described earlier using the HART Server application.

One of the HART multiplexer objects is for the Elcon / Pepperl & Fuchs 2700 Series interface and the other is for MTL4840 server interface. These objects can remain in the Control Structure even if they are not being used. Deleting the objects from the context menu is also permissible.

Disabling Multiplexer Communications

A number of actions, such as adding or removing a device from a multiplexer, require that the multiplexer communications with the PC first be disabled. There are two ways for doing this. One is, using the context menu of the Fieldbus Management aspect at the multiplexer object. The other is, using the Device Functions context menu from the multiplexer object.



The default communications status for a new installation of Asset Vision Professional or newly created multiplexer is Disabled.

Method using Device Functions context menu

1. Open the Asset Vision Professional workplace
2. Select the Control Structure from the structure list
3. Right-click the multiplexer object
4. Move the cursor over the Device Function context menu item
5. Select **Disable Communication**.

Method using Fieldbus Management aspect

1. Open the Asset Vision Professional workplace
2. Select the Control Structure from the structure list
3. Select the multiplexer object
4. Select **Field Management** aspect from the Aspect List
5. The mode icon at the bottom left of the Aspect View window indicates the current mode. Proceed to the next steps if it reads Communication enabled.

6. In the Aspect View area, right-click the Fieldbus Management.
7. Select **Disable Communications**.



The menu item for both methods toggles between Enable or Disable Communication depending on the current status. If the menu item reads Enable Communication, then the communications is already disabled and no action is needed.

Enabling Multiplexer Communications

Perform the same steps above for enabling Multiplexer Communications except select **Enable Communication** instead of Disable Communication.




Unless described otherwise, all configuration steps described throughout this section must be done in the Configuration disabled mode.

Scanning for Multiplexer Hardware

Perform the following steps to identify all connected multiplexers

1. Open the Control Structure.
2. Select the appropriate HART Multiplexer Subnet.

3. Select Device Management aspect and use the  drop-down menu to select List of Multiplexer:

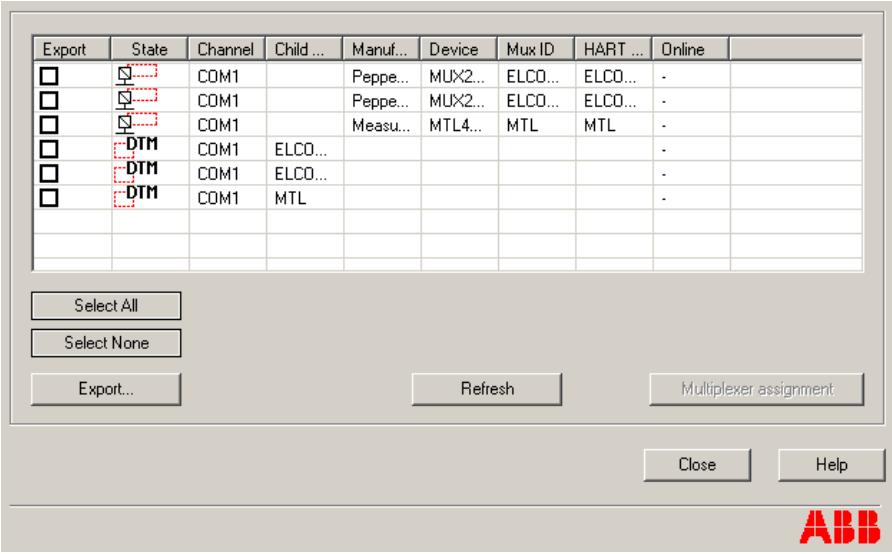


Figure 73. List of Multiplexer

4. Click **Refresh**.

The list view shows the instantiated Multiplexer objects and the physically existing Multiplexer hardware, found during the scan procedure of the HART Server.




List of Multiplexer

The HART Subnet DTM with its List of Multiplexer window provides information about instantiated Multiplexer objects and physically existing Multiplexer hardware (vendor, type, channel information), connected to the RS485/RS232 networks.

The State field is used to display an icon, that reflects the state of device configuration.

Table 5 shows the icons used in list Multiplexer.

Table 5. Icons used in list multiplexers

Icon	Description
	This icon represents an instantiated Multiplexer object in the Asset Vision Professional system, which is not associated to any physically existing Multiplexer.
	This icon represents a physically existing Multiplexer, identified from the HART Server during network scan.
	This icon represents an instantiated Multiplexer object, which is configured and assigned to an physically existing Multiplexer.

The **Refresh** button updates the list by scanning the network for physical Multiplexer hardware, connected to the HART Server. While the refresh process is active, this button is labeled **Stop Refresh** and all other buttons are disabled. Selecting **Stop Refresh**, cancels the refresh process.

The **Multiplexer assignment** button is available, if the DTM is in offline mode (Communication disabled) and exactly one Multiplexer object is selected in the list. Clicking this button opens a separate dialog, which allows the assignment of the instantiated Multiplexer object and the physically existing Multiplexer hardware.

The **Export** field in the list allows a selection of rows to export information. If the **Export** button is selected, the information about the selected entries are exported in a file. If no check box in the list is selected, the **Export** button is disabled. It is recommend to use a *.csv or *.xls file extension for export.

Assignment of the Multiplexer Object to the Multiplexer Hardware



The Multiplexer hardware from MTL does not support different channels, but it supports different panels. During instantiation of the MTL Multiplexer object, a panel is automatically created below the MTL Multiplexer object. If more than one panel is physically used, select the MTL Multiplexer object, right-click and create a new panel object. Repeat this step until all panels are instantiated.

For Elcon multiplexers, assign the physical channel to the Multiplexer.

For MTL multiplexers, assign the physical panel to the Multiplexer panel object as described in this section. A channel configuration for the MTL panels is not required.

The following operation associates an Asset Vision Professional multiplexer object for Elcon or MTL to a physical multiplexer

1. Select the Multiplexer object, which must be assigned to a physically existing Multiplexer.



Multiplexer objects, which are not assigned to Multiplexer hardware, are shown in the state column as DTM.

2. Click **Multiplexer assignment**. A screen, similar to the one shown in [Figure 74](#) is displayed.

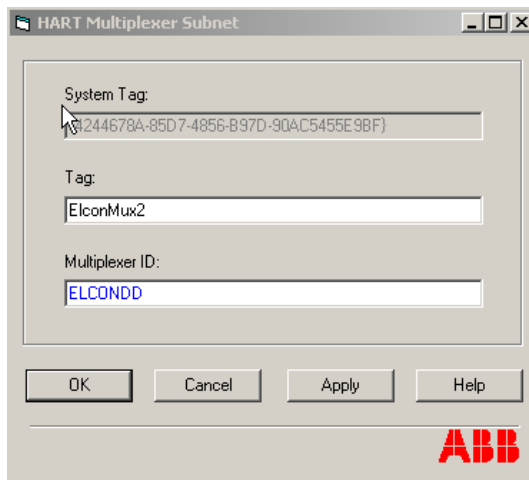


Figure 74. Assigning of the Multiplexer object to the hardware

3. Enter the Multiplexer tag.
4. Enter the Multiplexer ID.



A Multiplexer tag name entered in HART Server as shown in [Figure 71](#) should be entered as a Multiplexer ID in [Figure 74](#) for corresponding Multiplexers.

5. Click **OK**.

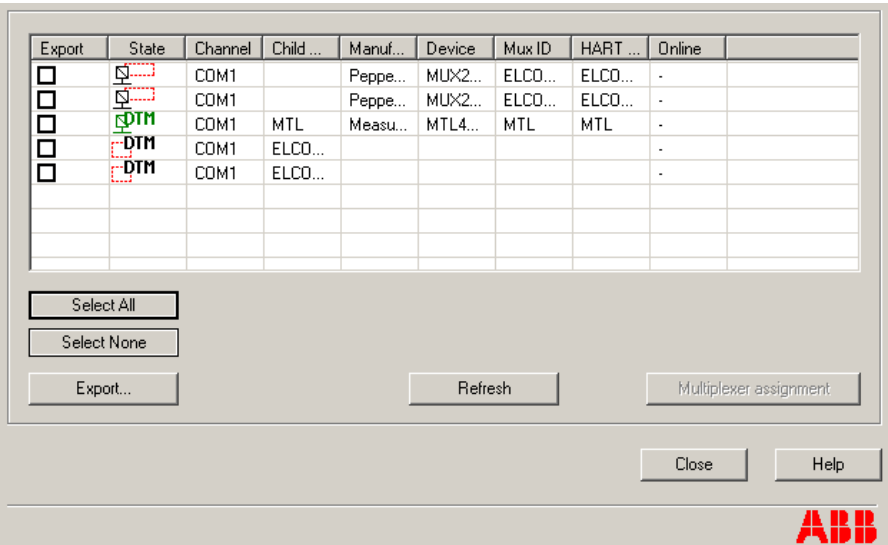


Figure 75. Assigned object to the Multiplexer hardware


If an Asset Vision Professional object matches to the physical hardware type, only one entry is visible for the Multiplexer object and the hardware. The icon of that entry is green.



Repeat steps 1 to 5 till all Multiplexer hardware is assigned to the proper object in the Asset Vision Professional.

Scanning HART Devices

This operation finds all HART devices that are physically connected to a multiplexer.

1. Select the Multiplexer object.
2. Select Device Management aspect of the Multiplexer object and use the  view selector to invoke List of HART Devices.

3. Click Refresh.

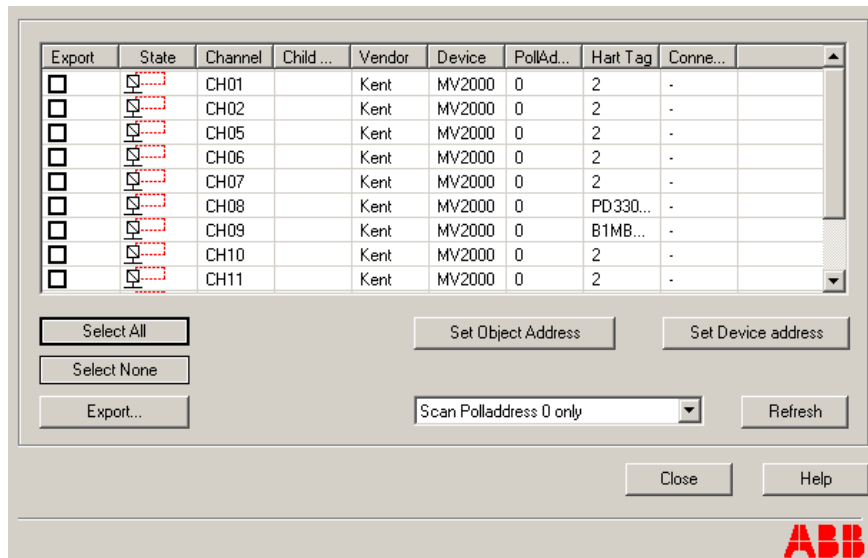


Figure 76. List of HART devices

The physically existing devices are shown in the list. The displayed devices are configured manually in the Asset Structure and inserted into the Control Structure.




List of HART Devices

The specific Multiplexer DTM provides information about HART devices (vendor, type, channel information) that are connected to HART channels of the selected Multiplexer.

If the Multiplexer DTM is called in an offline mode, the List of HART Devices provides a list of found devices. The State field is used to display an icon, that reflects the state of device configuration.

Table 6 shows the icons used in list of Multiplexers:

Table 6. Icons, used in List of Multiplexer


Icon	Content
	<p>This icon represents an instantiated device object in the Asset Vision Professional system, which is not associated to any physically existing HART device.</p> <p>This icon only appears, if more than one HART device is configured in the Asset Vision Professional Workplaces Control Structure to a specific channel, supporting multi-drop mode.</p> <p>For changing the polling address of the specific object, use the Set Object address button.</p>
	<p>This icon represents an physically existing HART device, identified from the HART Server during device scan (refresh).</p> <p>Changing the polling address of the physical device hardware uses the Set Device address button.</p>
	<p>This icon represents an instantiated device object, which is configured and assigned to an physically existing HART device.</p>

The **Refresh** button updates the list by scanning the Multiplexer for physical device hardware. While the refresh process is active, this button is labeled Stop Refresh and all other buttons are disabled.

Selecting Stop Refresh cancels the refresh process.

The **Set Object address** button is only available if the Multiplexer DTM is in offline mode (Communication disabled) and exactly one device object, which shall be assigned to a multi-drop address, is selected in the list.



Device objects are shown in the state column as 

Set Object address button opens a separate dialog for setting the Address/Tag of the HART device object as shown in [Figure 77](#). The entered address is not synchronized with the physically existing device hardware.

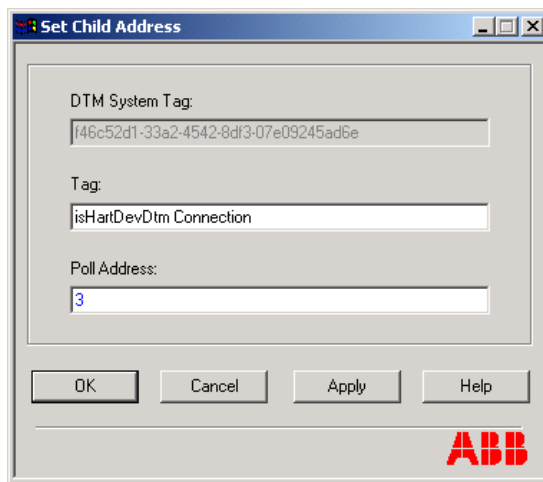



Figure 77. Set Object polling address and TAG



Changing the HART address of the physically existing device hardware is done via Set Device address button in the List of HART Devices window.

The **Set Device address** button is only available, if the DTM is in online mode (Communication enabled) and exactly one physical HART device, which is set to a poll address, is selected in the list.



Physical HART devices are shown in the state column as 

The **Set Device address** button opens a separate dialog for setting the poll address of the physical HART device as shown in [Figure 78](#). The entered address is not synchronized with the device object.

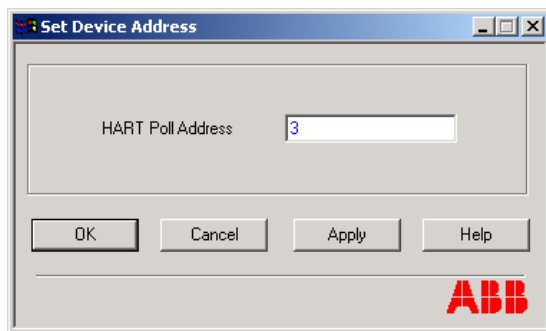


Figure 78. Set Device Address



Changing the address of the device object is performed using the Set Object address button in the List of HART Devices window.

The **Export** field in the list, allows a selection of rows for export information. If the **Export** button is selected, the information about the selected entries are exported in an excel file. If no check box of the list is checked the Export button is disabled. It is recommend to use a *.csv or *.xls file extension for export.

Use **Select all** button, if the export file contains the complete list of HART devices. All devices and objects are checked for export.

The **Select None** button removes all check marks of the selected objects.

There is a combobox for choosing the kind of scanning. Either only address 0 is scanned or the channels are polled from 0 to 15.

Instantiating HART devices

For each scanned device an appropriate HART device object must be instantiated in the Asset Structure and inserted into the Control Structure. The list of HART Devices shows these devices with vendor information, device type and the connected channel.



Select all objects in the list of HART Devices window and start an export. Use the export file (e.g. excel) to have the device information to be on hand for next steps.



Instantiating HART device objects in the Asset Vision Professional is only possible in Communication disabled mode.

Asset Vision Professional, provides preconfigured object types for corresponding device types, connected to the Multiplexer hardware.

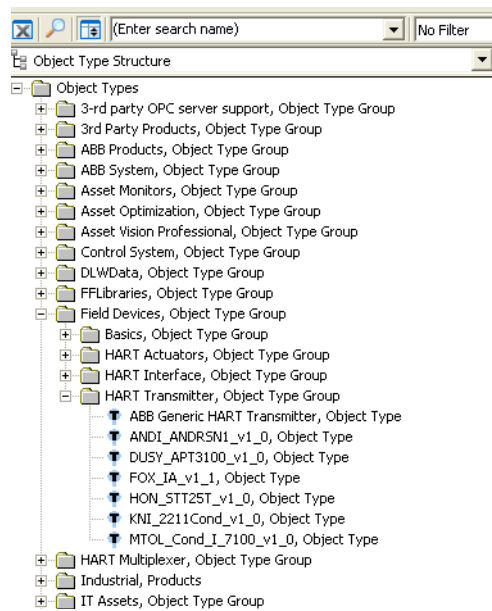


Figure 79. Preconfigured HART object types

Refer to [Adding Devices to Asset Structure](#) on page 47 for adding devices to the Asset Structure.



For HART, object types are stored inside the Field Devices folder. Use device types from HART Actuators and HART Transmitter Object Type Groups, instead of the object types in the Basics Object Type Group folder.



Asset Vision Professional includes HART Device Objects, for use with vendor specific DTMs. In most cases, the DTM is installed as part of an object type using the Device Library Wizard.



Vendor specific DTMs, at times include a license mechanism to run the DTM without limitations. The DTM license has to be ordered separately from the DTM vendor. Licenses for a DTM are not included in the Asset Vision Professional licensing.

This operation inserts the required device object types from the Asset Structure into the Control Structure, where a physical connection to the device is established.

1. Open the Control Structure.
2. Select the Multiplexer object below which the HART device object will be placed, e.g. Elcon's Series 2700.
3. Right-click to open the context menu.
4. Select **Insert Object** in the context menu.

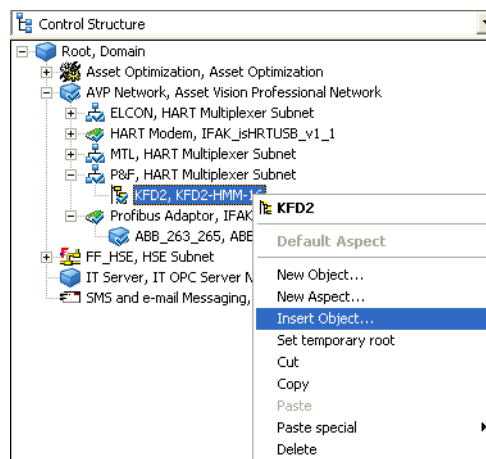


Figure 80. Inserting New Device Object

5. Open the Asset Structure in the new window, and locate and select the required device object.

The new device object is placed below the Multiplexer object. Repeat steps 2 to 5, until all the desired device objects are placed on the Multiplexer object.

Channel allocation on Multiplexer object

Perform the following steps to assign the HART device objects to the Multiplexer channels:

1. Open the Control Structure.
2. Select the Fieldbus Management aspect on the Multiplexer object type, e.g. Elcon's Series 2700.
3. The user interface of the Fieldbus Builder PROFIBUS/HART is displayed.
4. Click + to open the next level of the partial tree.

5. All positioned field devices, together with the channel information from the Multiplexer objects appears in the partial tree, as shown in [Figure 81](#).

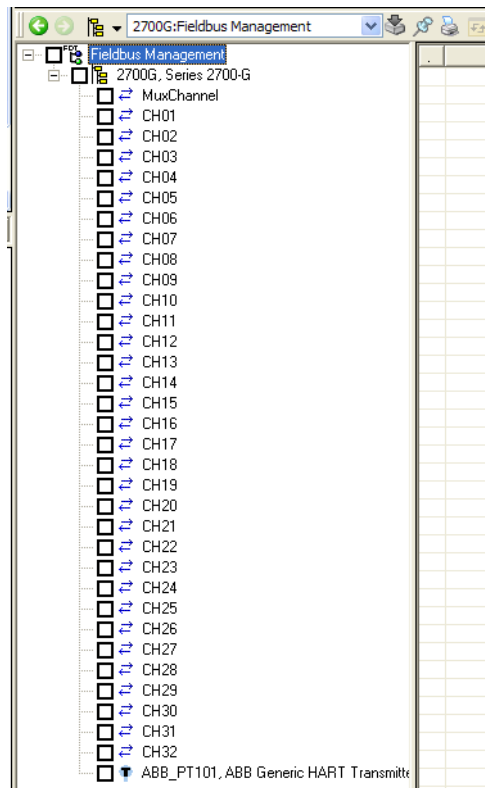


Figure 81. Fieldbus Aspect View

6. The field device is selected and moved to the required channel by pressing and holding down the mouse button (drag and drop). The field device automatically moves to the channel.

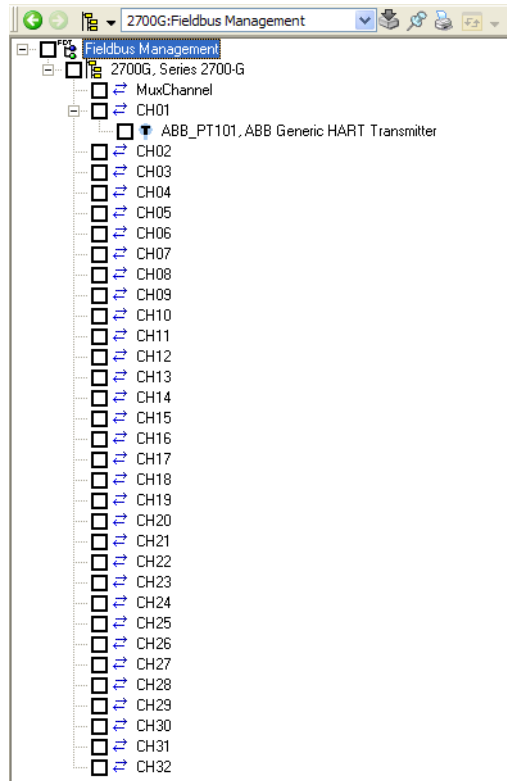


Figure 82. Assigned Devices on Multiplexer Channel

7. If the check box next to the device object is selected, the status window is updated and the object information is displayed.

This completes the Multiplexer channel configuration for the HART Mux DTM. Repeat steps 2 to 7, until all of the desired device objects are placed on the right Multiplexer channel.

To check, if all device objects are instantiated and assigned to the right Multiplexer channel, the List of HART Devices window on the Multiplexer object can be used.

1. Select the Multiplexer object.
2. Select Device Management aspect of the Multiplexer object and invoke List of HART Devices.
3. Click Refresh.

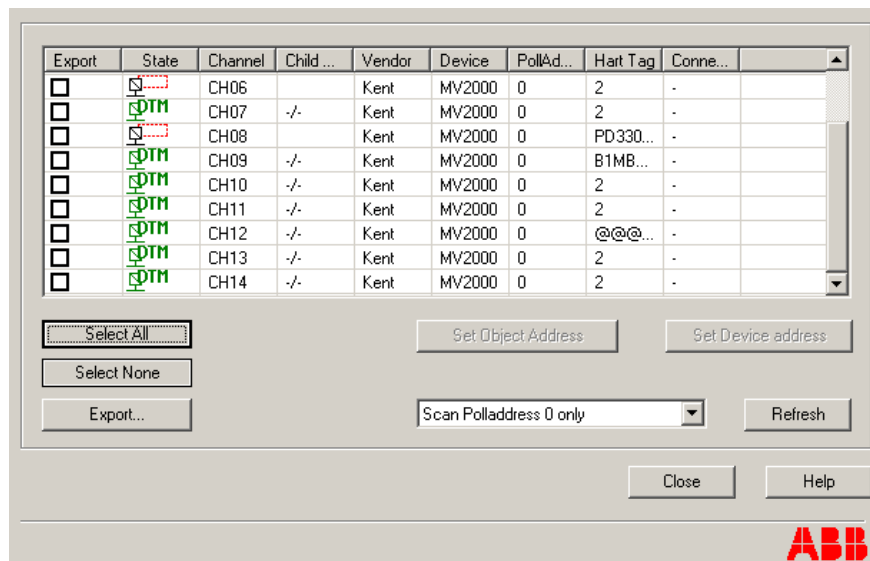



Figure 83. List of HART devices

If the device object matches with the physically existing HART device, only one entry for the HART device is shown. Correctly configured device objects are indicated with green DTM sign. The nonconfigured device types have to be configured as described in the steps above i.e, the steps to perform the channel allocation on Multiplexer Object.

The configuration is now done for the Multiplexer and the device objects.

Multiplexer Channel Configuration

This operation optimize the multiplexers performance by scanning and eliminating the unused channels.

1. Open the Control Structure.
2. Select the Multiplexer object.
3. Select Device Management aspect and use the View Selector  to select HART Channel Configuration.

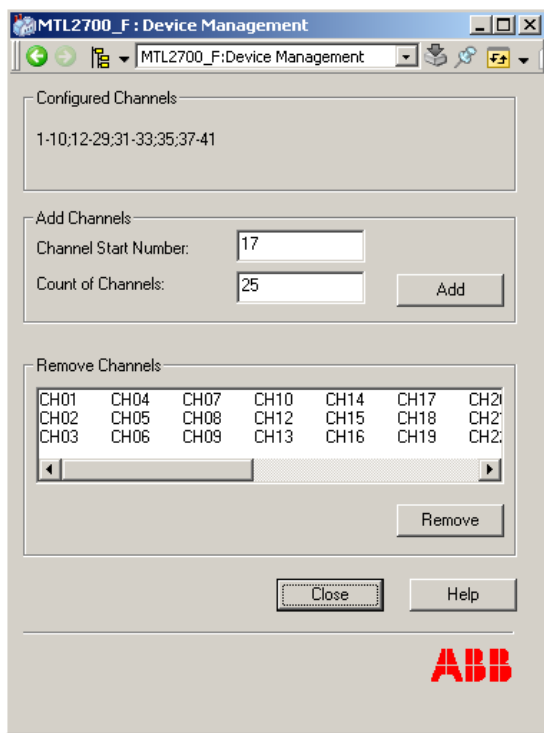


Figure 84. HART Channel Configuration

The current used and configured channels are shown in the frame Configured Channels. Channels, which are used from the Multiplexer hardware and not shown in this frame, can be inserted by using the Add Channels frame.

The channels are constructed as CHxx object name in the Control Structure, where xx is the number of the specific channel.

Add new Channels

The Add Channels frame allows further addition of used channels of the Multiplexer, which are not configured yet.

1. Enter the Channel Start Number of the channels, which shall be added to the configuration.

Channel Start Number allows to define the first missed channel of the Multiplexer hardware.



Example:

The first missed channel number is 17. Enter number 17 in the Name field.

2. Enter the increment number of channels in the Count of Channels field.

The entered number in the Count of Channels field is the amount of used channels.



Example:

The first missed channel number is 17. The last missed channel number is 19. Enter 3 in the Count of Channels field. Channel 17, 18 and 19 are added to the configuration.

Remove Channels

The Remove channels frame is used to delete the channels that are not used from the Multiplexer hardware. Multiple selection is possible. Click the Remove button to delete the selected channels.



Channel configuration optimizes the performance of the Multiplexer scan rate. Therefore, only the physically used channels are configured.



The add and remove functionality of the HART Channel Configuration window, is write protected, if HART devices are already associated to any HART channel of the Multiplexer object or if the HART Multiplexer network is in Communication enabled mode.

A channel configuration is not possible till all the inserted device objects below the Multiplexer object are deleted.

Check configured channels

- 1. Open the Control Structure
- 2. Select the Fieldbus Management aspect of the Multiplexer object.
- 3. Open the tree in the Fieldbus Management window.

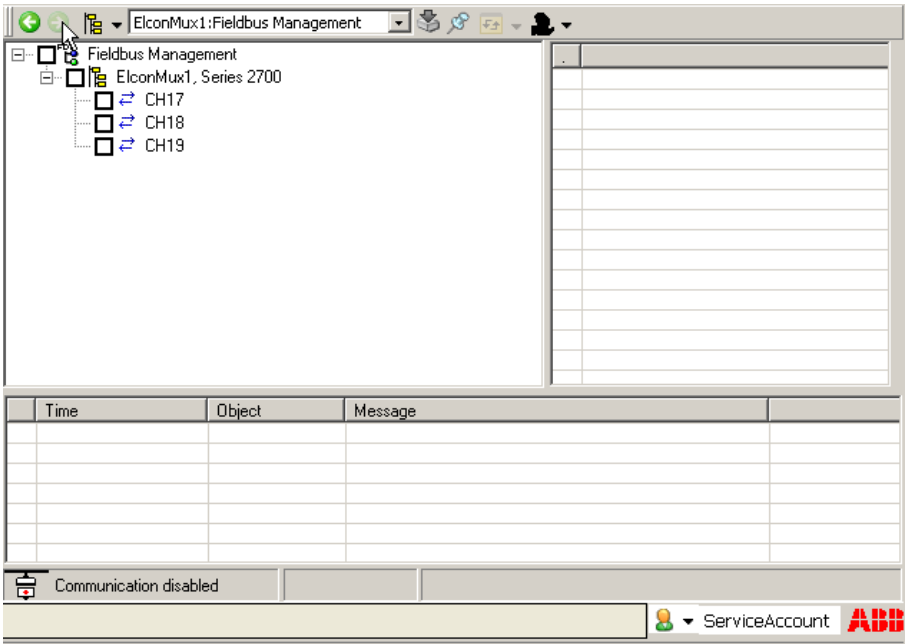


Figure 85. Configured HART Channels

Configured channels are visible in the Fieldbus Management tree below the Multiplexer object.



Repeat the procedure described in [Multiplexer Channel Configuration](#) on page 122 for each instantiated Multiplexer object.

The preinstalled Pepperl & Fuchs, Elcon and MTL multiplexer networks are ready to use, and are setup with Profibus / HART OPC Server addresses and Channel names. The remaining pages in this section are provided in case these parameters need modification in the multiplexer objects.

Only one Asset Vision Professional network can exist in Asset Vision Professional.

PROFIBUS/HART OPC Server Data Access



Unlike the HART modem, simultaneous access to device data via device DTM and OPC Server is supported for HART Multiplexer configuration.

Refer to [PROFIBUS/HART OPC Server data access](#) on page 89.

HART Multiplexer Subnet Configuration

1. Open the Control Structure.
2. Select the Elcon or MTL Multiplexer Subnet.

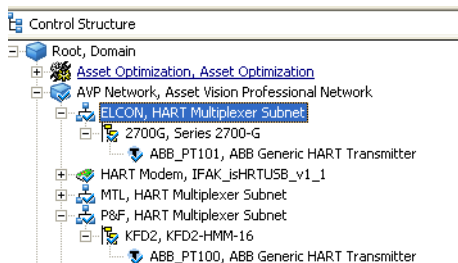



Figure 86. HART Multiplexer Subnet

3. Select the Aspect Device Management and use the View Selector  to select Host Selection.

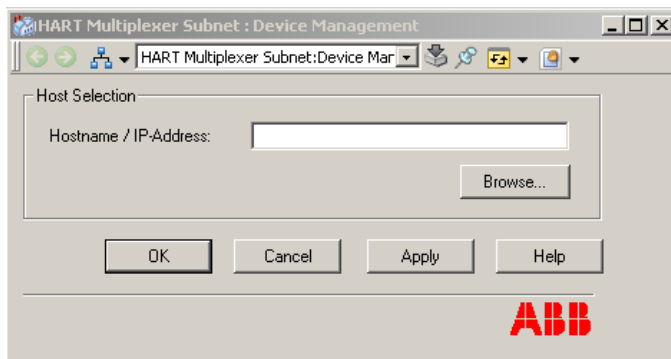



Figure 87. Specify the HART Server address

4. Enter the IP Address or Host name of Asset Vision Professional system (default installation uses 192.168.1.24).



It is not allowed to insert Localhost as a local host name.

This setting has to be performed in Communication disabled mode. If the Fieldbus Management is in Communication enabled mode, the IP address can be changed but is not accepted.

5. Use the View Selector  to call up DTM Channel Configuration.

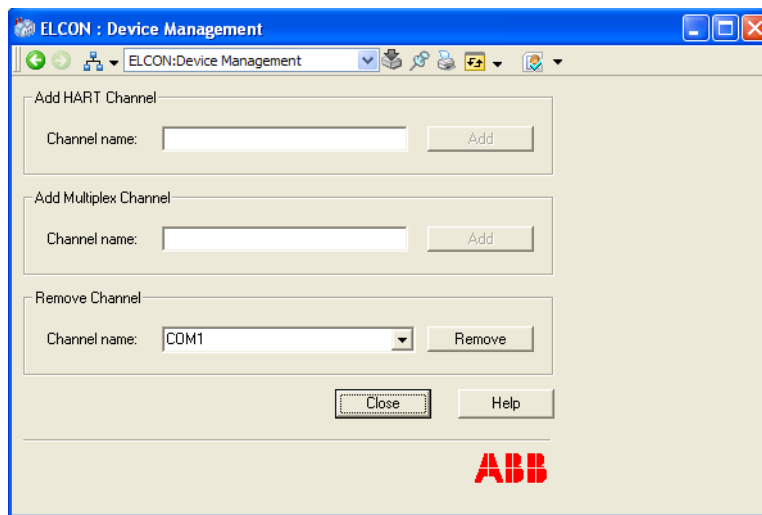


Figure 88. Channel Configuration

6. Enter the channel name as configured in the HART Server, using **Add Multiplex Channel**.



Do not add channel using Add HART Channel for Multiplexer usage.



The HART Subnet DTM is preconfigured with a channel name for the different Multiplexer types. The default channel name is COM1. If another channel name is used, it has to be entered here. The channel name must be configured in the HART Server as the network name as described in [HART Multiplexer Subnet Configuration](#) on page 125.

7. Click Add.



Repeat steps 2 to 6, till all host and channel names are configured for each subnet. Excluded channel names cannot access the physical HART Multiplexer in later configuration work.

8. Click **Close**.

The button **Add** is relabeled according to the selected channel name. If the channel does not exist, the button is labeled **Add** and if the channel does exist, the button is labeled **Remove**.

If it is not possible to edit the list of channel, the button is disabled. This occurs if the channel displayed in the edit field was already assigned a communication DTM.

Instantiation of HART Multiplexer Objects

Perform the following steps if a preexisting multiplexer object is deleted and needs to be reinstalled subsequently.

1. Open the Control Structure.
2. Select the HART Multiplexer Subnet.
3. Right-click and select **New Object**.
4. Select the Multiplexer hardware from the list.

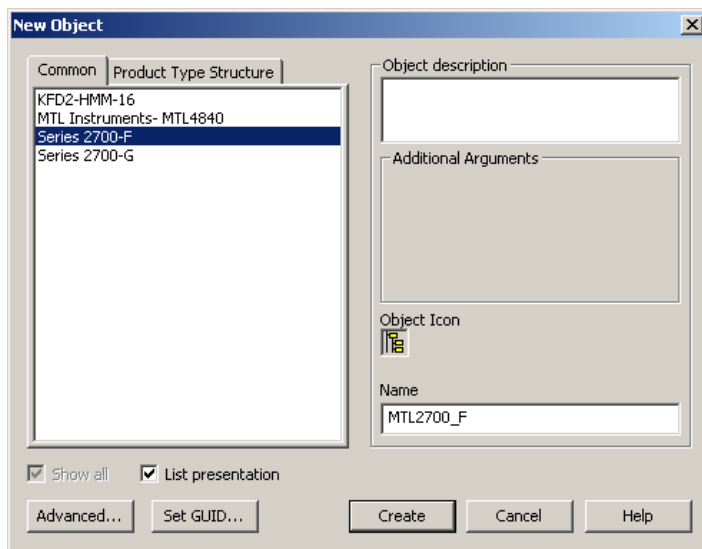


Figure 89. HART Multiplexer Objects in the Asset Vision Professional system

5. Enter the name and click **Create**.



Repeat steps 1 to 5 till all used Multiplexers are instantiated.

Enabling Slaves in Pepperl & Fuchs Multiplexer

Pepperl & Fuchs multiplexer supports 16 slave modules. By default, only slave 0 is enabled. Additional slaves addresses from 1 to 15 needs to be enabled manually. This section describes the procedure to enable additional slaves addresses.

1. Connect P&F multiplexer and all the slave modules to Asset Vision Professional node.
2. Open **GnHost.exe** application located in <Install Path>\HART Multiplexer Connect\HART Server.
3. Select the respective HART multiplexer in the device tree.
4. In the command tab, as shown in [Figure 90](#), enter the request '**157**' with:
 - the data '**00FF**' to enable Multiplexer slave modules 0-7

- the data '**FFFF**' to enable all slaves from 0-15

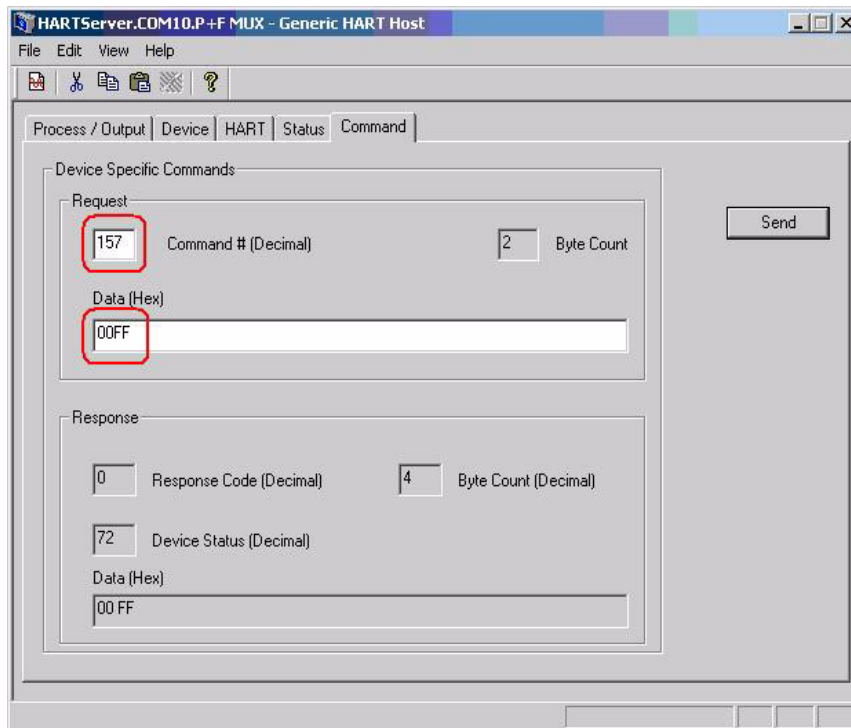


Figure 90. HART Server - Enabling Slaves

5. Once the data has been set, click **Send** to enable the slaves in multiplexer.

Section 4 Asset Optimization Reporting

Overview

The Asset Vision Professional System provides three Asset Optimization Reports that summarize important maintenance information to provide maintenance engineers with comprehensive data to make decisions. The Asset Optimization Reports are:

- [AO Asset Condition History Report](#)
- [AO Calibration Report](#)
- [AO Running Time Report](#)

These reports are implemented as a Microsoft Excel (.xls) files. The templates are used in conjunction with the Inform IT Scheduler system extension. Reports are run manually and can be scheduled periodically as defined in the Scheduling Definition aspect. Report data is retrieved through DataDirect macros or by using custom macros written in Visual Basic. All report parameters are defined in a second configuration sheet. When data is collected and formatted, the reports can be optionally printed or historized, if Information Management is installed and appropriately configured.

AO Asset Condition History Report

The AO Asset Condition History Report provides, for every asset, a detailed listing of all asset maintenance conditions that have been active in a time interval, and counts the number of faults per each condition. This report is based on an Alarm and Event list (Event type) configured to display Asset Conditions. The AO Asset Condition History Report identifies repeating asset condition offenders and highlights critical assets with high failure rates. This report can be used to define a proactive maintenance strategy.

AO Calibration Report

The AO Calibration Report lists, for every device, all calibration events with the time that the event occurred and shows the current calibration state on top of the list

This report is based on an Alarm and Event list (Event type) configured to display calibration events. The AO Calibration Report helps to identify the current calibration state for every device. For example: waiting for approval, due for calibration, work in progress, etc.

AO Running Time Report

The AO Running Time Report lists all assets in a given structure with a Runtime Asset Monitor. It shows, per asset, the configured runtime limit value, hours of operation, indication that the runtime limit is active, and the date of the last Asset Monitor reset. Furthermore, it calculates the remaining time days of operation until the runtime limit is reached based on the current calculated average runtime rate. The AO Running Time Report allows sorting by tag, object type, runtime limit, and alarm active.

Asset Optimization Reporting Configuration



These procedures provide general guidelines for configuring Asset Optimization Reports. For detailed information, refer to the Creating Reports and Scheduling sections in Industrial IT, 800xA - Information Management, Operation.



Data Direct Add-in must be added to MS Excel using AVPSERVICE account to run the Scheduler automatically. For more information, refer to:

- *3KXD151801R4401 - Industrial^{IT} Asset Vision 5.0 SP2 Installation User Manual.*

The document can be found on DVD1 in the Released Documentation\800xA folder. Alternatively, the latest version of the documents can be downloaded from [ABB Solutions Bank](#).

Asset Optimization Reporting provides a preconfigured Job Description for each of the Asset Optimization Report Templates in the system. Each Asset Optimization Report Job Description must be configured prior to reporting.

Asset Optimization Report Templates are configured in the Scheduling Structure.

1. Open Asset Vision Professional Workplace.
2. Use the Structure Selector to open the Scheduling Structure in the Asset Vision Professional Workplace.
3. Use the Object Browser to navigate to:
Schedules and Jobs > Job Descriptions, Job Folder > AO Asset Condition History, Job Description
4. Select Scheduling Definition in the Aspect List to display the Scheduling Definition aspect view, with the Schedule tab selected, in the Preview Area as shown in [Figure 91](#).

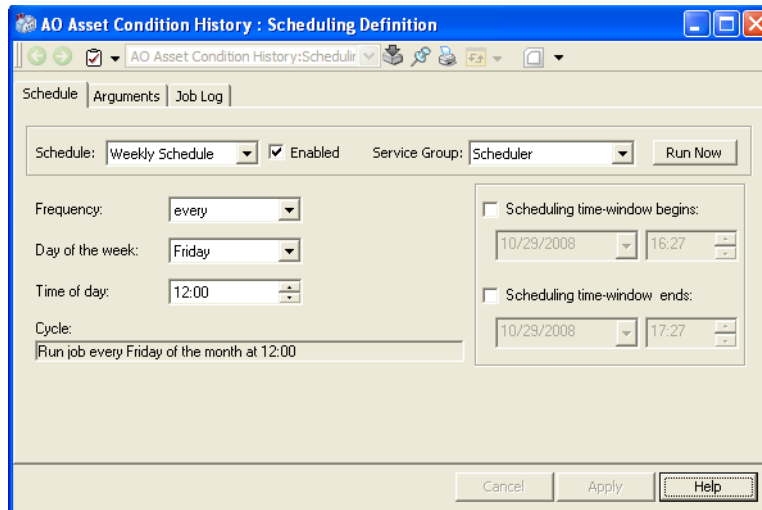


Figure 91. Scheduling Definition

5. Select the type of schedule desired (cyclic, periodic, weekly, or monthly) from the Schedule drop-down list.

6. Depending on the schedule type selected, the bottom half of the aspect view changes. Fill in the fields as desired to complete the configuration for that schedule type.
7. Enable the **Enabled** check box must be enabled in order to run the reports automatically.



This procedure describes configuration to automatically run reports on a configured schedule. The Run Now button is used to run reports as desired. For more information on operator actions, refer to:

- *3BUA000150Rxxxx - Industrial IT, 800xA - Asset Optimization, Operation.*
- *3BUA000118R5021 - Industrial IT, 800xA - Asset Optimization, Configuration.*

The document can be found on DVD1 in the Released Documentation\800xA folder. Alternatively, the latest version of the documents can be downloaded from [ABB Solutions Bank](#).

8. The Action Aspect must also be configured for each report type. This defines the input parameters for the report and how the report will be retained and

optionally printed. Select Action Aspect in the Aspect List Area to display the Action Aspect view in the Aspect Preview Area as shown in [Figure 92](#).

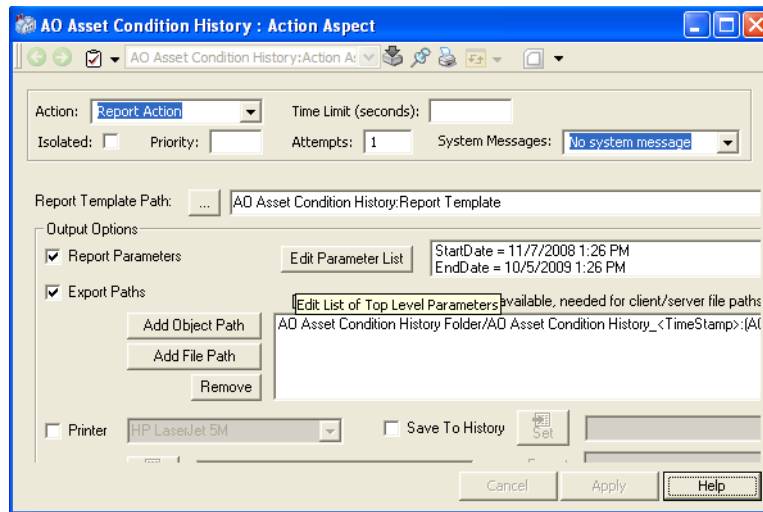


Figure 92. AO Asset Condition History - Action Aspect

9. Each report type requires report parameter configuration and can be edited after clicking **Edit Parameter List**. The parameters for each report type are described in the topics immediately following this procedure:
 - [AO Asset Condition History Report Parameters](#)
 - [AO Calibration Report Parameters](#)
 - [AO Running Time Report Parameters](#)

AO Asset Condition History Report Parameters

The AO Asset Condition History Report Template (refer to [Figure 93](#)) requires configuration of the following parameters:

- StartDate: Start time (oldest event) in mm/dd/yyyy hh:mm am/pm format.
- EndDate: End time (newest event) in mm/dd/yyyy hh:mm am/pm format.

- **MaxRows:** Maximum number of rows to retrieve for this report.

To edit these parameters, select parameter and click **Modify**.

Report Parameters

Name	Value
StartDate	11/7/2008 1:26 PM
EndDate	10/5/2009 1:26 PM
AEObjPath	[Scheduling Structure]Asset Optimization Report Templates/AO Ass...
MaxRows	200
ReportTitle	AO Asset Condition History

Add Modify Remove Close

Figure 93. Edit Parameter - AO Asset Condition



Do not change AEObjPath parameter.

AO Calibration Report Parameters

The AO Calibration Report Template (refer to [Figure 94](#)) requires configuration of the following parameters:

- **StartDate:** Start time (oldest event) in mm/dd/yyyy hh:mm am/pm format.
- **EndDate:** Time (newest event) in mm/dd/yyyy hh:mm am/pm format.
- **MaxRows:** Maximum number of rows to retrieve for this report.

To edit these parameters, select parameter and click **Modify**.

Name	Value
StartDate	9/28/2004 1:02 PM
AEObPath	[Scheduling Structure]Asset Optimization Report Templates/AO Cali...
MaxRows	200
ReportTitle	AO Calibration Report
EndDate	10/5/2004 1:02 PM

Figure 94. Calibration Edit Parameters

AO Running Time Report Parameters

The AO Running Time Report Template do not require configuration of parameters.

Runtime Asset Monitor Configuration

The Runtime Asset Monitor, monitors the accumulated runtime hours of a device and notifies preventive maintenance, that the runtime has accumulated up to a configured limit.

1. In order to add Runtime Asset Monitoring capability to an Object Type, the three aspects (Asset Reporter, Runtime Asset Monitor and Runtime Asset Monitor Faceplate Inputs) shown in [Figure 95](#) are required to be added to that Object Type. For this purpose, it is recommended to copy and paste the required aspects from the Runtime Asset Monitor Object Type (**Object TypeStructure > Object Types > Asset Monitors, Object Type Group >**

Runtime Asset Monitor, Object Type) to the target Object Type. Once the aspects are copied, it is necessary to modify the Object Type Definition aspect by properly setting the newly added Aspect Instantiation attributes as shown in [Figure 95](#).

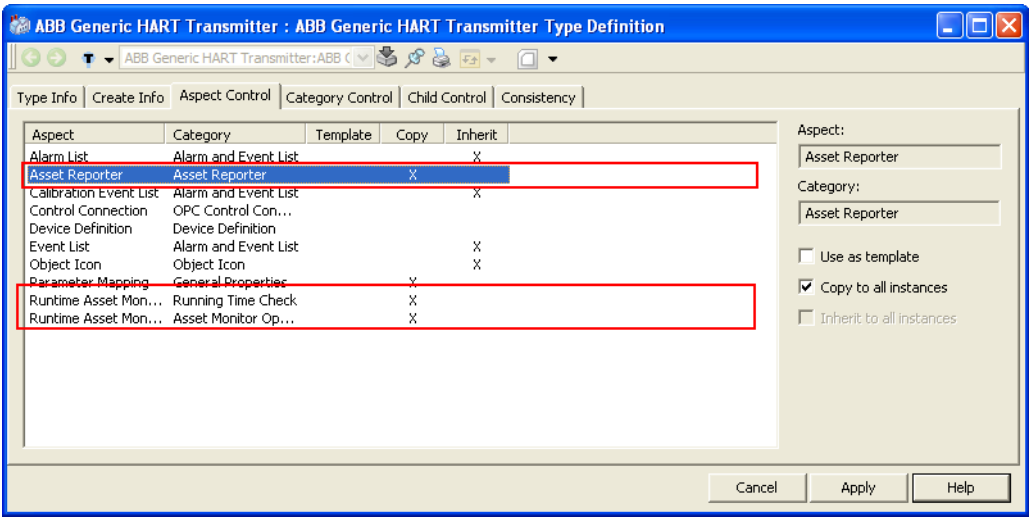


Figure 95. Type Definition Aspect

Where:

Runtime Asset Monitor: Represents one Runtime Asset Monitor.

Runtime Asset Monitor Faceplate Inputs: Provides option to reset **ResetSignal** and to set **HoursResetBias**.

To reset the runtime select Runtime Asset Monitor Faceplate inputs aspect on device instance to open Aspect as shown in [Figure 96](#).

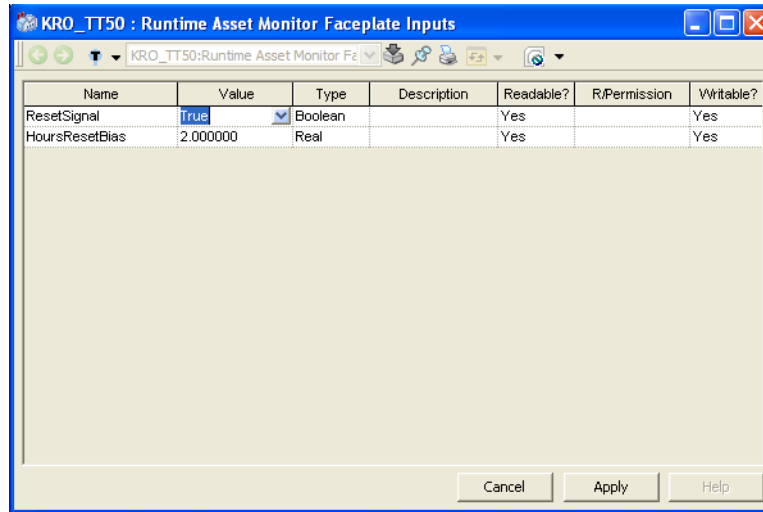


Figure 96. Faceplate Inputs

Set Reset signal value to True and click **Apply**.



For detailed configuration of Runtime Asset Monitor, refer to:

- *3BUA000118R5021 - Industrial^{IT} 800xA Asset Optimization Configuration*
- *3BUA000150R5021 - Industrial^{IT} 800xA Asset Optimization Operation*

The documents can be found on DVD1 in the Released Documentation\800xA folder. Alternatively, the latest version of the documents can be downloaded from [ABB Solutions Bank](#)

Section 5 Device Library Wizard

Device Library Wizard

A range of preconfigured device types for Asset Vision Professional are available for the fieldbus protocols FOUNDATION Fieldbus, PROFIBUS and HART.

The Device Library Wizard is a tool that is used for adding these separately delivered device types to the device libraries of Asset Vision Professional.

This section describes the process of adding these device types to Asset Vision Professional using Device Library Wizard.



Detailed information about the Device Library Wizard and further functionality is described in *Industrial^{IT}, Device Library Wizard User Manual (2PAA102573R5021)*.

Profibus Device Type Libraries for Asset Vision Professional are available on Asset vision DVD 2, HART Device Types for Asset Vision Professional are available on Asset vision DVD 3 and Foundation Fieldbus Device Types for Asset Vision Professional are available on Asset vision DVD 4. Also, additional device types are available on ABB Solutions bank. This section describes a common workflow, such as, how to work with Device Types in the Device Library Wizard for Asset Vision Professional.

A general workflow to add device types to the Asset Vision Professional system is listed below:

- **Step 1:** Check availability of the required device types. Device types can be downloaded from ABB Solutions bank. Additionally, a set of released device types are available on Asset Vision Professional Device Library DVDs.
- **Step 2:** Extract the device type files using the Device Library Wizard.

- **Step 3:** Read the corresponding device type release notes for details and limitations. Release Notes are provided together with the device type file or can be downloaded from ABB Solutions bank publication.
- **Step 4:** Install the required device types to the Asset Vision Professional system.
- **Step 5:** Perform fieldbus protocol specific post-installation actions, if included in the device type release notes or the specific system release note.
- **Step 6:** Extend/Delete Device Types from Device Library Wizard Server.

Using Device Library Wizard

Installation

The Device Library Wizard setup consist of two components.

- Device Library Wizard - Client

The client program provides the graphical user interface for installation of device types.

- Device Library Wizard - Server

The server program interacts as a service on the Asset Vision Professional System and provides history information to the Device Library Wizard - Client.



Installation of the Device Library Wizard software is performed during Asset Vision system Installation. Refer to the following Asset Vision documents for Detailed Asset Vision System Installation: *3KXD151801R4401, Industrial IT, Asset Vision 5.0 SP2 Installation manual.*

Preselection of System Environment

During the start of Device Library Wizard, a preselection box as shown in [Figure 97](#), is displayed.

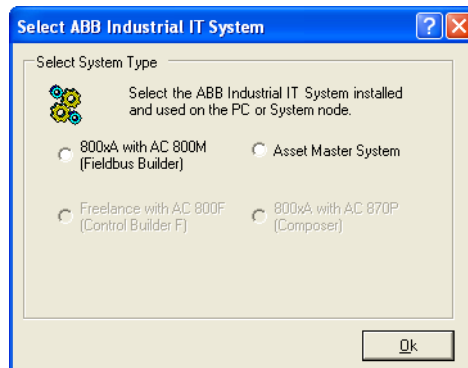


Figure 97. System Type Selection

Select **Asset Master System** and click **OK**.

Step 1: Obtain Device Types

ABB provides a continuously increasing portfolio of system tested and certified ABB and third party device types. They are available from 800xA Device Library DVDs or from ABB Solutionsbank.

Download from the Solutionsbank

1. Login to ABB Solutions Bank, <http://solutionsbank.abb.com>
2. Open **Downloads > Downloads Explorer**.
3. Browse
 - **Control Products and Systems / 800xA / Device Management - FOUNDATION Fieldbus / Device Library - <category>**
for FOUNDATION Fieldbus device types or

- **Control Products and Systems / 800xA / Device Management - HART / Device Library - <category>**
for HART device types or
 - **Control Products and Systems / 800xA / Device Management - PROFIBUS / Device Library - <category>**
for PROFIBUS device types
- and download the required device type files to the local machine.

Device Library DVDs

The device types available at point of time the Asset Vision Professional version is released, are stored on the Device Library DVDs. The device type files are separated in the specific folders related to the fieldbus protocol.

Step 2: Extract Device Type Files

Device type files exist as zip files (.zip) or self extracting zip files (.exe). Both file extensions are handled in parallel by the Device Library Wizard.

The location, where device type files are stored is different from the currently used system node. It is **not** required to copy all the device type files to the local disk.



Extract device types needs to be executed once on one PC. The extracted files are automatically available on other PCs with DLW-Client.

Perform the following steps to extract the device type files:

1. Open the Device Library Wizard: **Start > All Programs > ABB Industrial IT 800xA > Device Mgmt > ABB Device Library Wizard** or double-click the

ABB Device Library Wizard shortcut on the Desktop. A screen, similar to the one shown in [Figure 98](#) is displayed.

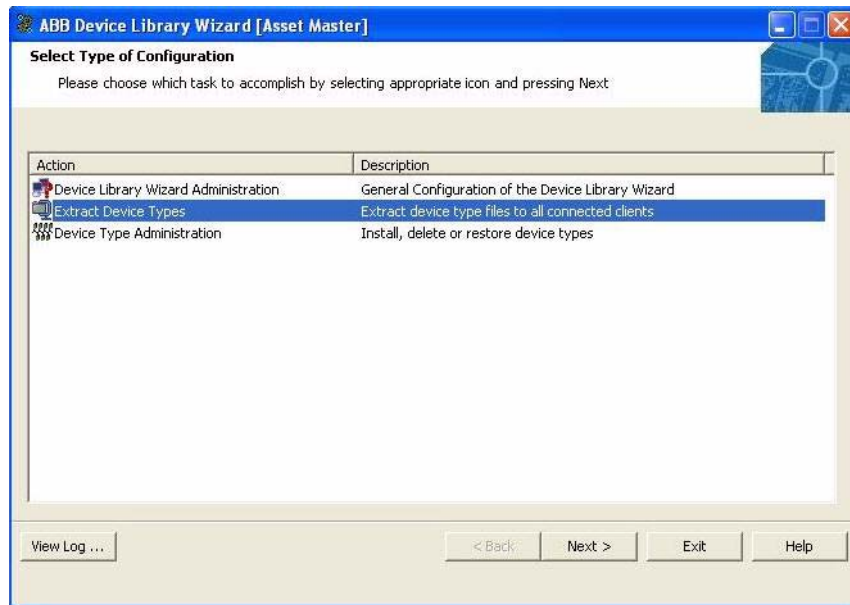


Figure 98. Selected Extract Device Types

2. Select **Extract Device Types** and click **Next**.

3. A screen, similar to the one shown in [Figure 99](#) is displayed. Select **Extract Device Types via Manual Selection** and click **Next**.

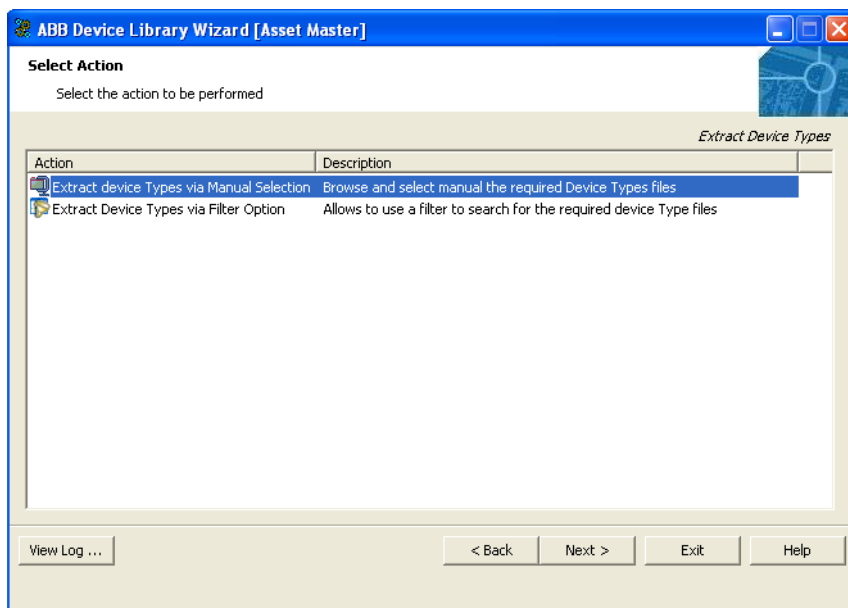


Figure 99. Device Type Extraction via Manual Selection

4. Click **Browse** and navigate to the corresponding folder that contains the device type files of the device types.

5. Select the required device type files (multiple selection is possible) and click **Open**.

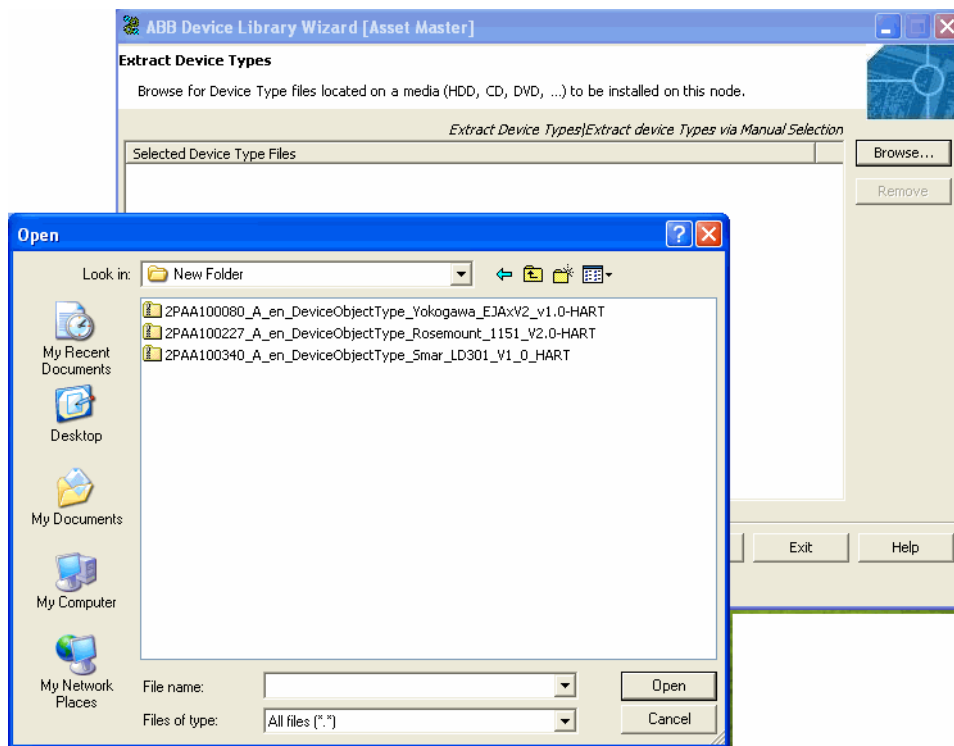


Figure 100. Selected Device Type Files

The selection is displayed in the Extract Device Types window as shown in [Figure 100](#).

- 6. Click **Next** to start the extracting operation.

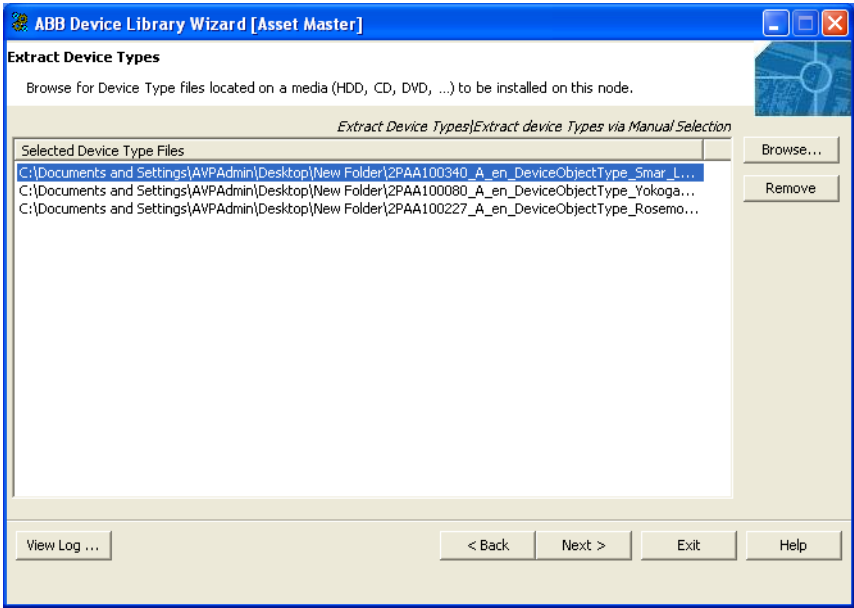


Figure 101. Device Type Files Selection View

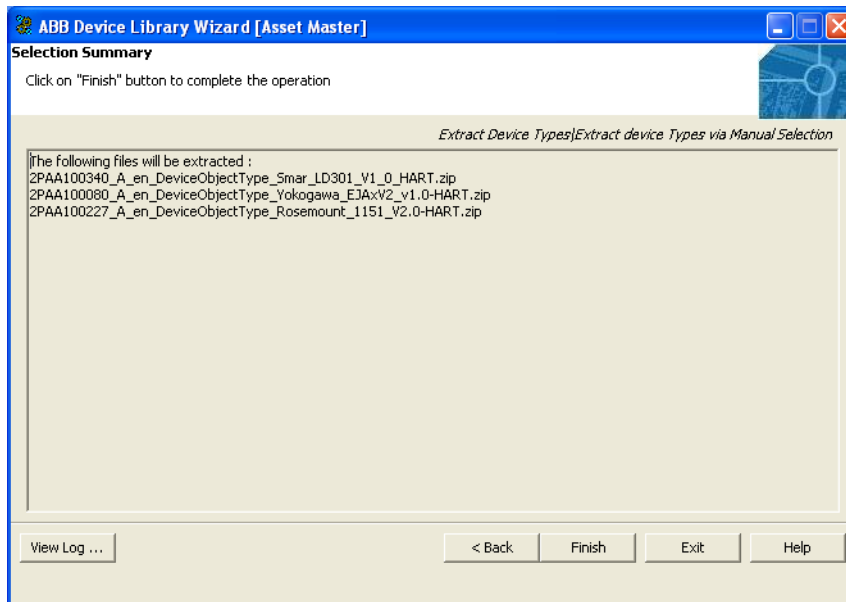
7. Click **Finish**.

Figure 102. Complete the Extract Device Type Operation



Device type files include the filename extensions _HART, _FF, _DP and _PA in the file name. On this basis, the Device Library Wizard extracts the device type file and ensures that the device types are placed in the appropriate folders. The folders exist only on that node, on which the Device Library Wizard - Server is installed.

For FOUNDATION Fieldbus:

<Installation path>\ABB Industrial IT\Engineer IT\ABB Device Integration Library\FF Device Integration Library

For HART:

<Installation path>\ABB Industrial IT\Engineer IT\ABB Device Integration Library\HART Device Integration Library

For PROFIBUS

<Installation path>\ABB Industrial IT\Engineer IT\ABB Device Integration Library\PROFIBUS Device Integration Library

These paths are fixed (except the installation drive and root path) and cannot be changed by the user.

Successful extracting operation is shown in the logger area as shown in Figure 103.

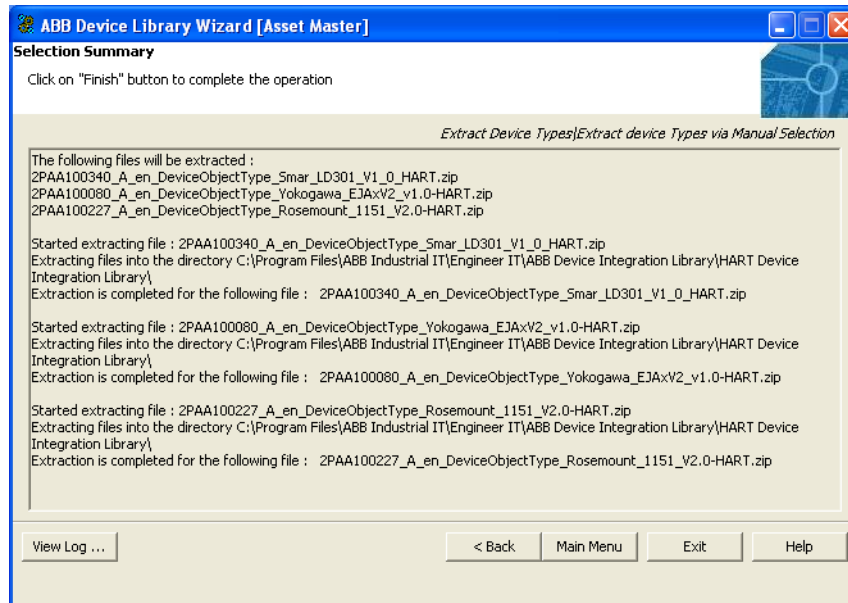


Figure 103. Extraction Successful

8. Repeat step 3 to 6 in this chapter for all required device types. Use **Main Menu** button to navigate directly to the main window. Click **Exit** to close the program if no more operations are required.

Step 3: Read Release Notes of the Device Types

Each device type file includes a release note for the corresponding device type. Read the release note carefully for detailed information or limitations.

The release notes of each extracted device type are directly accessed using the Device Library Wizards - Device Selection windows, where device types are

displayed. To open the release note of a particular device, right-click on the listed device type.

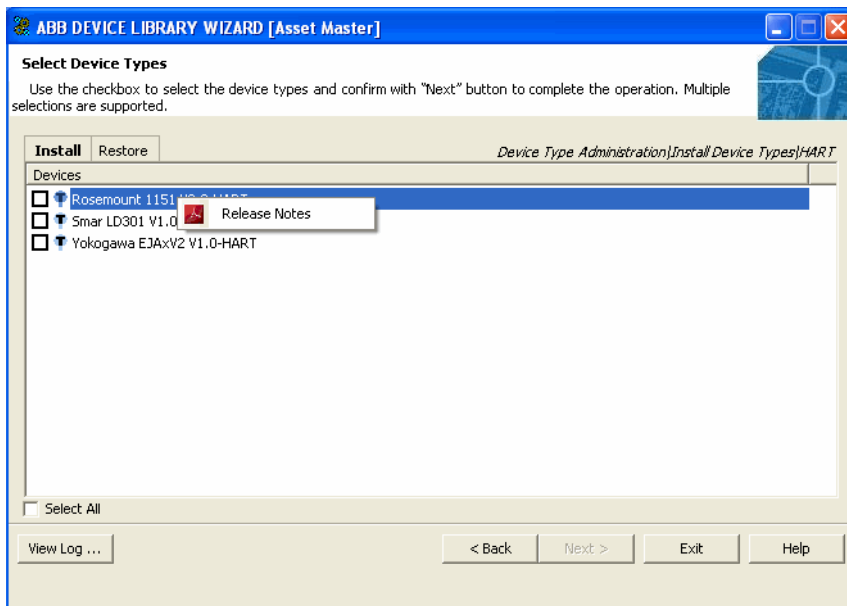


Figure 104. Read Release Notes

Alternatively, the release notes are stored in the root folder of the specific device type. The folders exists only on the node, where the Device Library Wizard Server is installed.

- For FOUNDATION Fieldbus browse to:
<Installation path>\ABB Industrial IT\Engineer IT\ABB Device Integration Library\FF Device Integration Library\<Device Type>
- For HART browse to:
<Installation path>\ABB Industrial IT\Engineer IT\ABB Device Integration Library\HART Device Integration Library\<Device Type>
- For PROFIBUS browse to:
<Installation path>\ABB Industrial IT\Engineer IT\ABB Device

Integration Library\PROFIBUS Device Integration Library\<Device Type>

Step 4: Install Device Types via Device Library Wizard

Installation of device types via Device Library Wizard are possible for different fieldbus protocols (HART, PROFIBUS, FOUNDATION Fieldbus).

The Device Library Wizard offers the following functionality to add, extend or restore device type objects in Asset Vision Professional:

- **Install Device Types**

New device types can be installed to Asset Vision Professional. If the device type has been installed already, it will be reinstalled. A windows message is displayed to confirm overwriting the existing device type.

This option must also be performed to install new minor version of a device type, where a previous version has already been installed.

- **Restore Device Types**

The Restore Device Type functionality of the Device Library Wizard just installs 3rd party software not included in the system setup without modifying the device type objects in the system.

It is recommended to take the latest available minor version of the used device type in the previous system version for the restore function. New device types can be downloaded from ABB Solutionsbank at (<http://solutionsbank.abb.com>).



Restore device type function does not include any updates or enhancements of Aspects in the ABB system environment. To get the new functionality of the latest minor version device type in the system, it has to be reinstalled via Device Library Wizard **Install Device Type** function.

To perform the described functionality of the Device Library Wizard, Asset Master system and the required fieldbus protocol must be selected by the user. Follow the instructions to install a device type to an ABB Industrial IT System:

1. Open the Device Library Wizard:

Start > All Programs > ABB Industrial IT 800xA > Device Mgmt > ABB Device Library Wizard

or double-click the **ABB Device Library Wizard** shortcut on the Desktop. A screen, similar to the one shown in [Figure 105](#) is displayed.

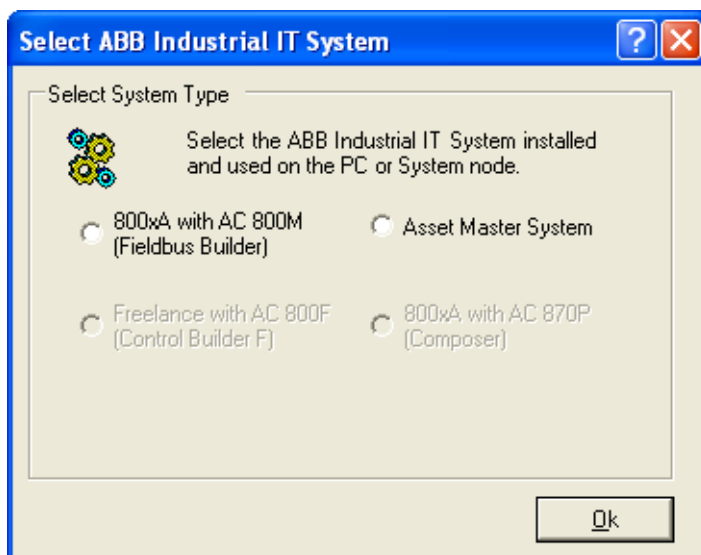


Figure 105. System Type Selection



Windows and ABB Industrial IT System administrator rights are required to execute the Device Library Wizard on the PC.

2. Select **Asset Master System** and click **OK**. A screen, similar to the one shown in [Figure 106](#) is displayed.

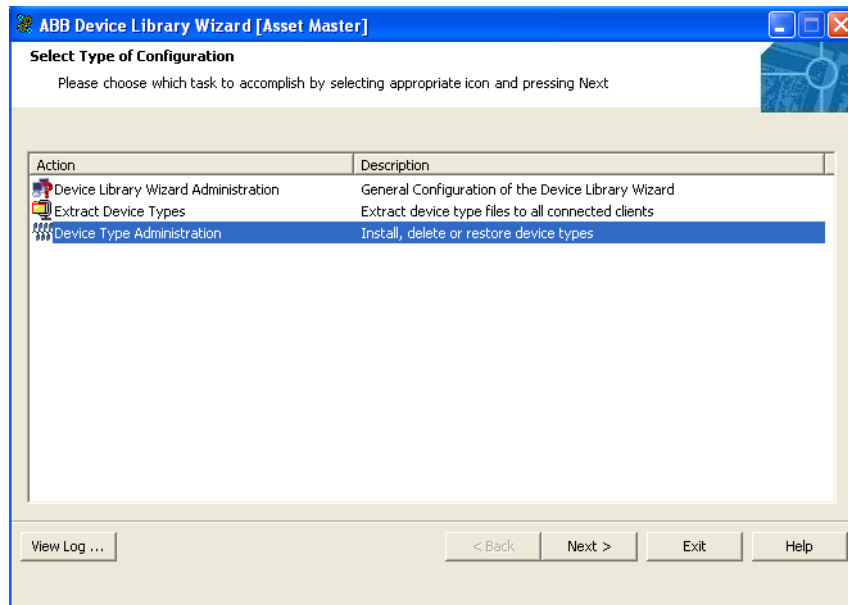


Figure 106. Device Type Administration

3. Select **Device Type Administration** and click **Next**.

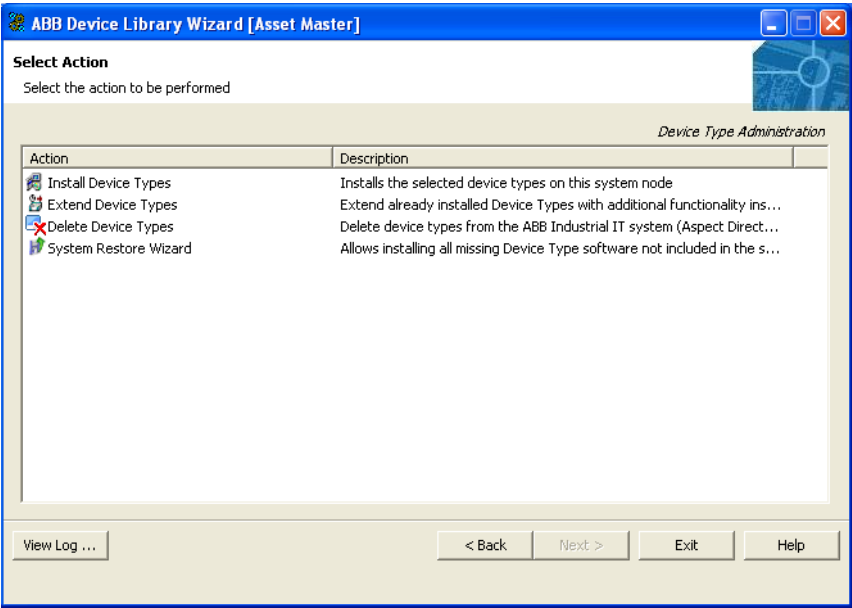


Figure 107. Action Selection

4. Select **Install Device Types** to install new device types or reinstall device type to the Asset Vision Professional system. Click **Next**.

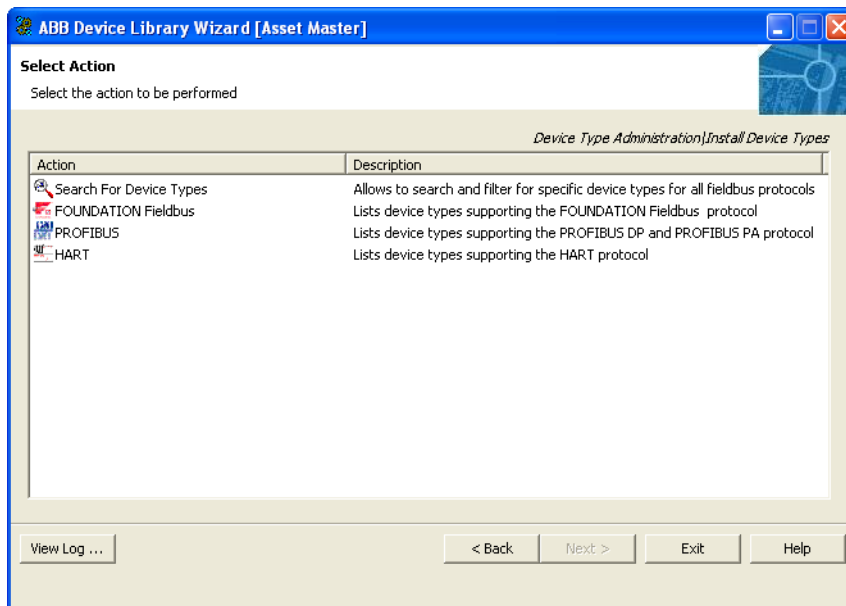


Figure 108. Fieldbus Protocol Selection

5. Select the fieldbus protocol used in the system. The following fieldbus protocols are currently supported:
 - **FOUNDATION Fieldbus**
 - **HART**
 - **PROFIBUS**

6. Click **Next** to confirm fieldbus selection.

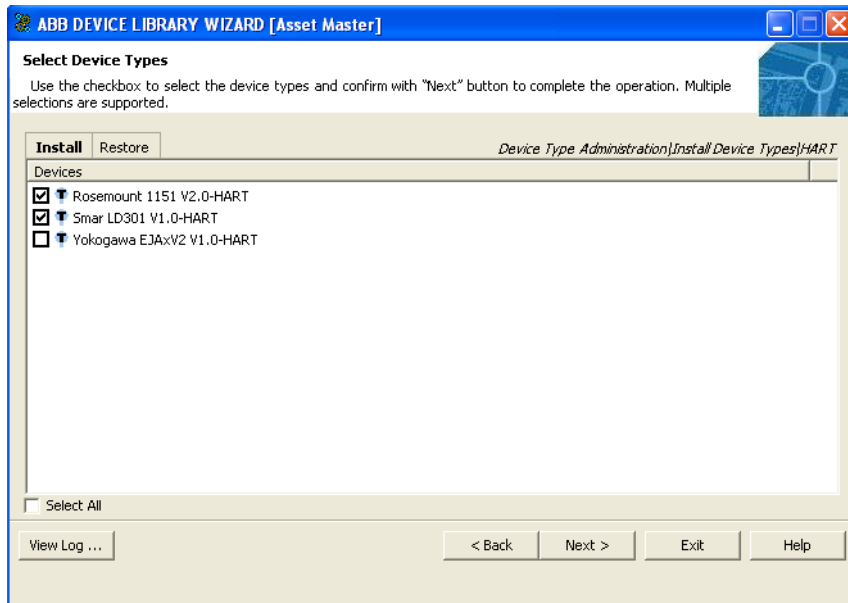


Figure 109. Fieldbus Protocol Selection Dialog

7. A list of all extracted device type files of the specific fieldbus protocol except those, which have been installed already is displayed.
This window offers two tabs representing the available device types for installation.
 - **Install** shows the device types that will be installed.
 - **Restore** shows device types that are already installed.

To install device types to the system, the particular device type has to be selected using the respective check box against the device type. Select the **Select all** check box to select all listed device types.

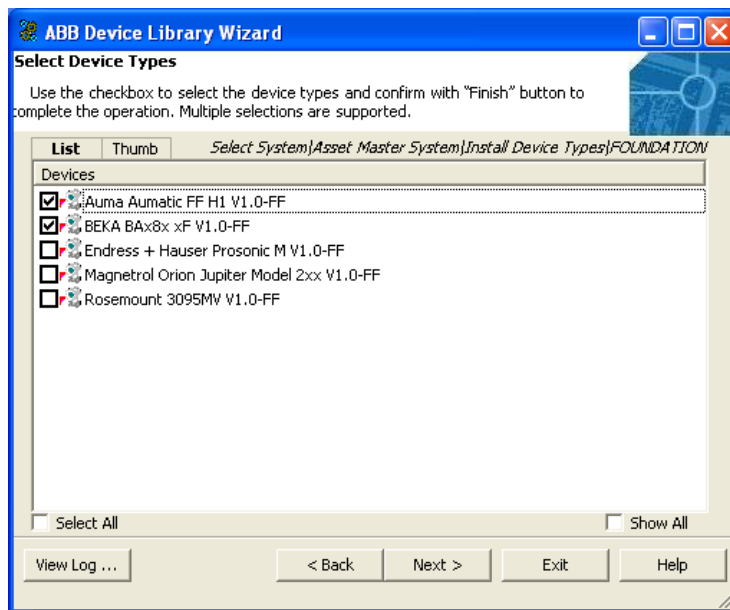







Figure 110. Device Selection Dialogue - List View

Right-click on the listed device type name to access device specific release notes.

The icons below, shows the status of the selected device types:

	Installation successful.
	Already installed Device Type.
	Installation failed.
	Installation is not completed.
	Missing components (e.g. DTM is not installed)

8. Click **Next** to confirm the selection.

9. Click **Finish** to start the installation of the selected device types.

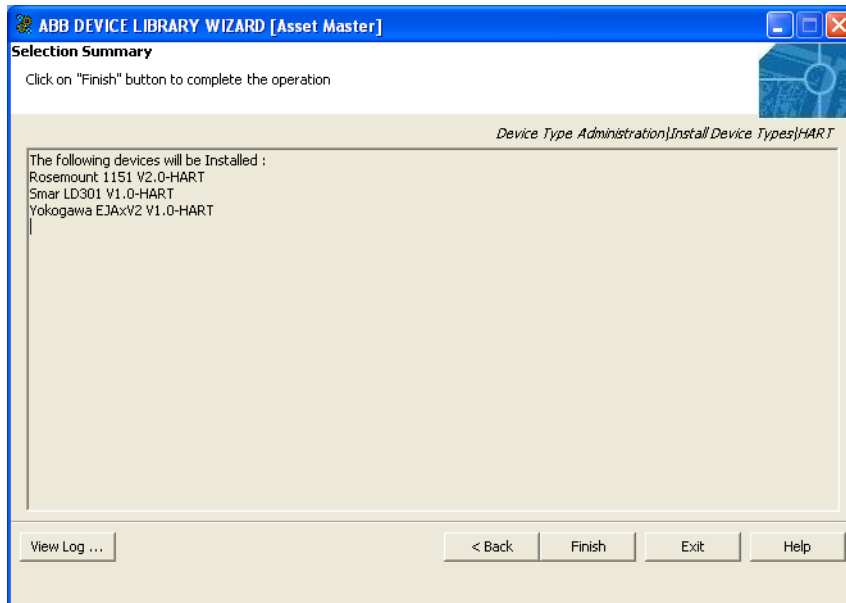


Figure 111. Start Device Type Installation



Device types installed already in the ABB Industrial IT System, will be overwritten. A confirmation of this operation will result in overwriting the existing device type. In this case, user-made modifications at device types may be overwritten.

The status of the operation will be shown in the logger area. Wait till installation is complete. A status window appears next to the Device Library Wizard window, which gives additional information to the installation process.

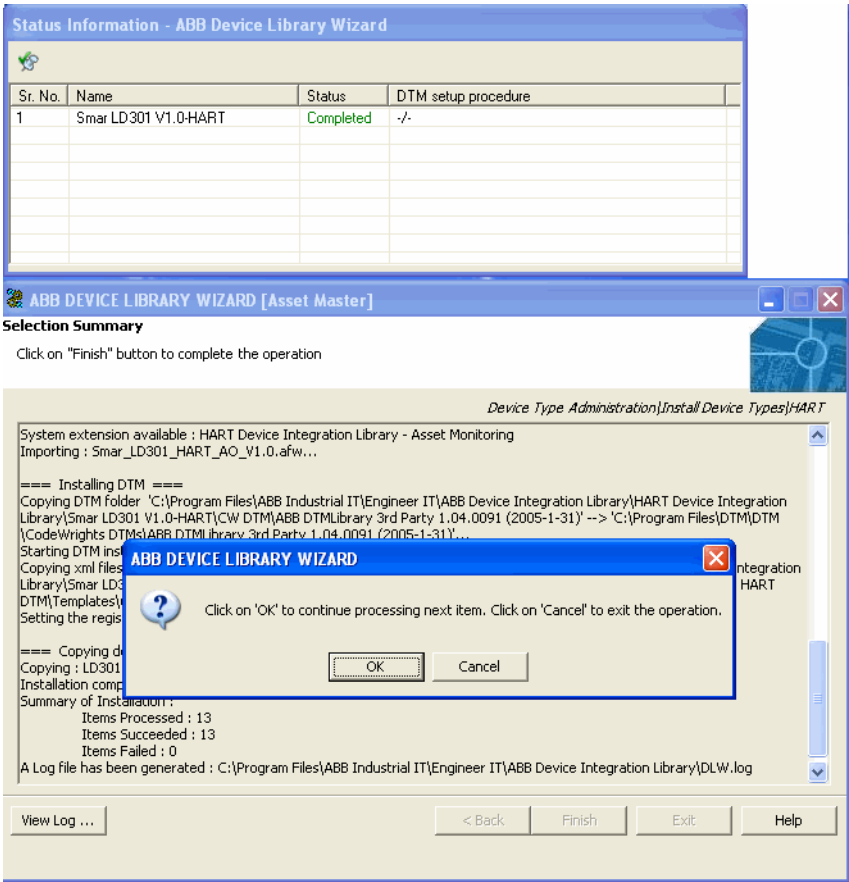


Figure 112. Progress Messages



Depending on the used device type, further information windows may be shown during the installation. For example, which Device Type Manager should be selected from a DTM setup, if the DTM installation is not controlled by the Device Library Wizard. Click **OK** to Confirm and perform the actions suggested from the information window. Additional information is shown in the status window.



During installation of device types, additional software may be installed on the PC. For example, Device Type Manager (DTM). Read the release notes of the selected device type carefully, whether license agreements or special settings for this software must be considered.

In case of bulk operation for device types, where additional software (e.g. DTM) is installed and not controlled by the Device Library Wizard, the start of the installation for each single device type must be confirmed by the user. The Device Library Wizard will not proceed with the next device type until a confirmation is made.



Installation issues can stop the operation. In this case error messages are visible in the logger area. Please contact your local ABB representative for further assistance.

During device type installation, product documentation and other software may be copied to the local disc.

Successful installation is indicated with **Installation completed!** entry in the logger area.

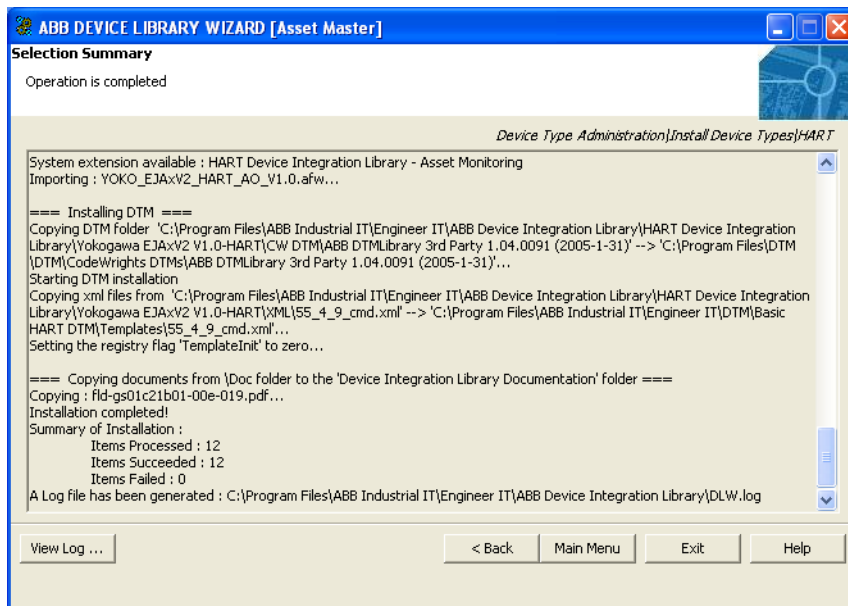


Figure 113. Installation Successful



Device Library Wizard generates a log file. To view the contents of the log file, Click **View Log** in the Device Library Wizard window.

The path to the log file is

<Installation path>\ABB Industrial IT\Engineer IT\ABB Device Integration Library\DLW.log.

10. To install more device types to Asset Vision Professional, click Main Menu and repeat step 2 to 9. Otherwise, close Device Library Wizard with **Exit** button.

Step 5: Post-Installation

Post-Installation has to be done for special adjustments outside ABB responsibility. The corresponding release note of the device type lists those special adjustments and settings, if applicable. Post-installation issues have to be carried out to ensure a proper usage of the device types in Asset Vision Professional.

Examples for post-installation issues:

- Special settings for 3rd party software components, e.g. Device Type Manager, etc.
- Inclusion of 3rd party licenses for Device Type Manager.
- Selection or usage of external programs.

Step 6: Extend/Delete Device Types

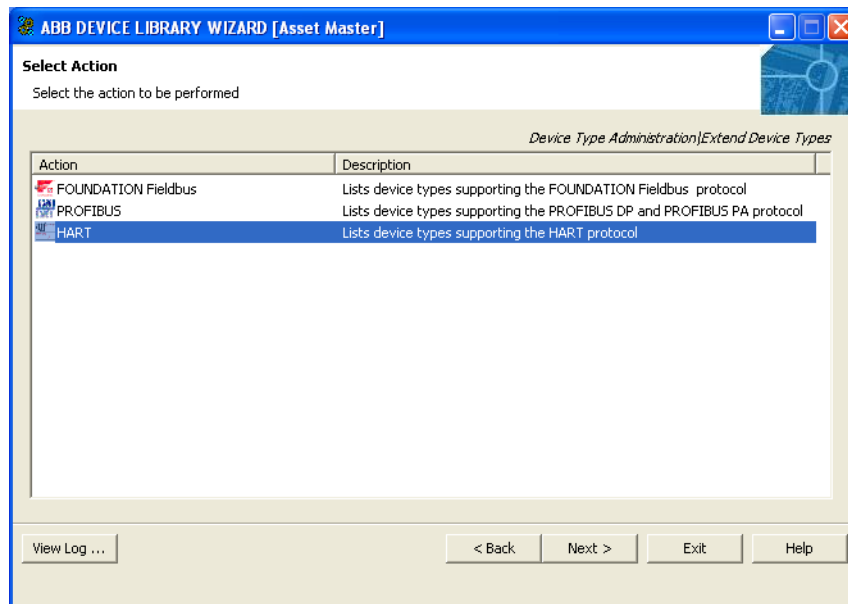


Figure 114. Extend Device Type

Select the required fieldbus protocol and click **Next** in a similar screen, as shown in [Figure 114](#). A new window appears on the screen which displays device type files, which can be extended with new functionality that is not installed yet.

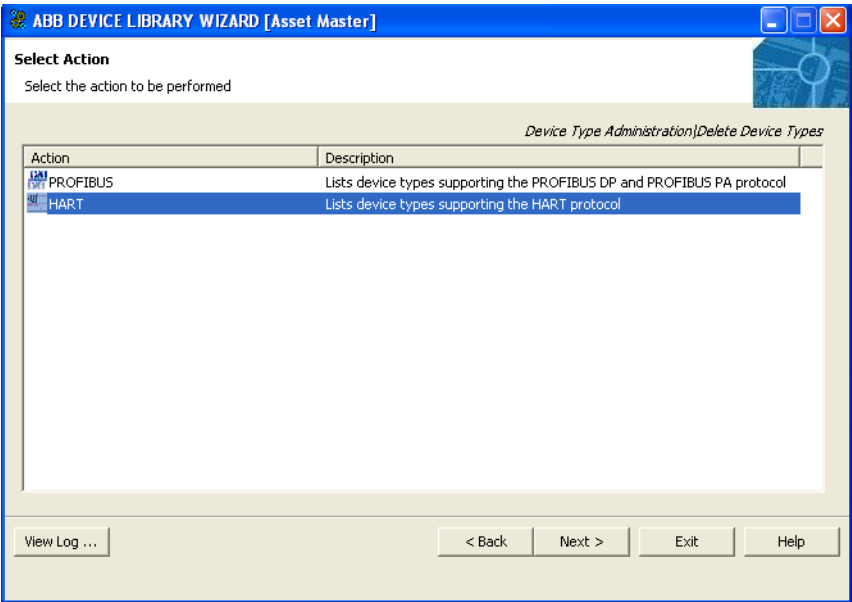


Figure 115. Delete Device Types



PROFIBUS device types will be deleted only from the Library Structure. They are still available in the Object Type Structure. It is strongly recommend to delete these device types manually from the Object Type Structure.

Section 6 Detailed Window Description

This section describes all specific graphical user interfaces (windows), which are available as standard with the Device Library Wizard.



Refer to Section 3 in the following 800xA documents for Detailed Window Description of Device Library Wizard:

- *2PAA102573R5021 - Industrial^{IT} Device Library Wizard User Manual*

The document can be found on DVD1 in the Released Documentation\800xA folder. Alternatively, the latest version of the documents can be downloaded from [ABB Solutions Bank](#).

Appendix A Terminology

This appendix lists the terms associated with Asset Vision Professional. We recommend you to understand these terms.

Table 7. Terms Associated with Asset Vision Professional

Term	Description
Alarm	<p>Abnormal state of a condition associated with an Aspect Object™. For example, the object FC101 may have the following conditions associated with it: Sensor error, flow over range, totalizer exceeded.</p> <p>An alarm is active as long as the abnormal state of the corresponding condition persists. An alarm is unacknowledged until a user acknowledges it.</p>
Alarm acknowledgement	<p>User action to confirm the recognition of an alarm. Acknowledgement changes the state of an alarm from unacknowledged to acknowledged.</p>
Aspect	<p>An aspect is the description of properties of an Aspect Object. Some examples of aspects are name, device management, DMS, and asset monitor.</p>
Aspect category	<p>Specialization of an aspect type. For example, the Asset Monitors aspect type includes all of the Basic Asset Monitor aspect categories.</p>
Aspect Object	<p>A computer representation of real objects such as pumps and valves or a number of virtual objects such as service or object type. An Aspect Object is described by its aspects and organised in structures.</p>

Table 7. Terms Associated with Asset Vision Professional (Continued)

Term	Description
Aspect Object Type	Defines certain characteristics that are shared between several object instances, such as a basic set of common aspects. This makes it possible to create and efficiently re-use standardized solutions to frequently recurring problems. For example, rather than building an object from scratch for every valve in a plant, you can define a set of valve types, and then create all valve objects of these instances.
Aspect Server	A server that runs the central functions of the Aspect Object architecture, such as Aspect Directory, Structure and Name Server, Cross Referencing, File Set Distribution, etc. Contains all Aspect Objects and their aspects.
Aspect system	A software system, which implements one or several aspect types by providing one or several aspect system objects.
Component Object Model (COM)	Definition programming interface to allow for the creation of components for use in integrating custom applications or to allow diverse components to interact.
Context menu	Appears when you right-click on an Aspect Object or an aspect. Lists aspect operations, actions, aspects, and global operations.
Distributed COM (DCOM)	Remote Procedure Calls to enable distributed component objects to communicate with each other.

Table 7. Terms Associated with Asset Vision Professional (Continued)

Term	Description
Event	A detectable occurrence, which is of significance to an Aspect Object. May or may not be associated with a condition. For example, the transitions into HighAlarm and Normal conditions are events, that are associated with conditions. However, operator actions, system configuration changes, and system errors are examples of events, that are not related to specific conditions. OPC Clients may subscribe to be notified of the occurrence of specified events.
FOUNDATION Fieldbus (FF)	Bi-directional communications protocol used for communications among field instrumentation and control systems.
Graphical User Interface (GUI)	Graphical user interface
Industrial ^{IT}	Industrial IT is ABB's solution for business processes. It allows seamless integration of systems for plant automation, plant optimisation and common business processes at run time.
Node	A computer communicating on a network e.g. the Internet, Plant, Control or I/O network. Each node typically has a unique node address with a format depending on the network it is connected to.

Table 7. Terms Associated with Asset Vision Professional (Continued)

Term	Description
OLE for Process Control (OPC)	OPC is based on the Microsoft COM/DCOM technology. DCOM permits data exchange across computer boundaries.
OPC	OLE (Object Linking and Embedding) for Process Control, a standard interface for data, event and history access based on COM.
PC	Personal Computer. Computer running the Windows operating system.
Permission	A permission (or access mask) groups a set of operations that require the same authority. For each operation defined for an aspect, the aspect category specifies the permission needed to use that operation.
Security	<p>Security controls a user's authority to perform different operations on Aspect Objects, depending on several parameters:</p> <p>The user's credentials, as provided by Windows</p> <p>The node where the user is logged in. This makes it possible to give a user different authority depending on where he/she is located, e.g. close to the process equipment, in a control room, or at home accessing the system through Internet.</p> <p>The object the user wants to perform the operation on.</p>
Server	A node that runs one or several Services.
Structure	A hierarchical tree organization of Aspect Objects that describes the dependencies between the real objects. An Aspect Object can exist in multiple structures, for example both in a Functional Structure and in a Location Structure.

Table 7. Terms Associated with Asset Vision Professional (Continued)

Term	Description
System	Collects all data of a project. Administrated by the Configuration Wizard.
View	Aspects can be presented in a number of ways depending on the task performed e.g. viewing or configuration. Each presentation form is called a view.

You should familiarise yourself with the following list of terms which refer to the FOUNDATION Fieldbus terminology.

Table 8. FOUNDATION Fieldbus Terminology

Term	Description
FF Network	A FOUNDATION Fieldbus network is comprised of one or more HSE subnets and/or one or more H1 links all interconnected
Fieldbus	A Fieldbus is a digital, two-way, multi-drop communication link among intelligent measurement and control devices. It serves as a Local Area Network (LAN) for advanced process control, remote input/output and high speed factory automation applications.
Fieldbus device	Device connected through an Asset Vision Professional supported fieldbus. Examples are smart sensors and actuators, but also controllers, robots, variable speed drives, etc., when these devices are connected through a supported fieldbus.
FOUNDATION Fieldbus Network	Refer to FF Network.
H1	H1 is a term used to describe a FOUNDATION Fieldbus network operating at 31.25 kbit/second.

Table 8. FOUNDATION Fieldbus Terminology (Continued)

Term	Description
H1 Field Device	An H1 Field Device is a fieldbus device connected directly to an H1 fieldbus. Typical H1 Field Devices are valves and transmitters.
H1 Link	An H1 link interconnects one or more H1 Devices. Refer to Link
High Speed Ethernet (HSE)	High Speed Ethernet (HSE) is the Fieldbus Foundation's backbone network typically running at, but not being limited to 100 Mbit/second.
HSE Device	Any FOUNDATION Fieldbus device type connected directly to HSE Media. Examples include Linking Devices, I/O Gateway Devices, and HSE Field Devices.
HSE Linking Device	HSE Linking Devices interconnect one or more H1 links to an HSE subnet. Linking devices provide for access between HSE devices and H1 devices and for access between H1 devices interconnected by an HSE network. A linking device may also contain an H1 bridge that provides for H1 to H1 communications between bridged H1 links.
HSE Subnet	HSE Subnets are IP networks. They are permitted to contain bridges, but not routers. The HSE Subnet is used to qualify the Link Id. The combination of the HSE Subnet and the Link Id is unique across all HSE Subnets of a system. An HSE subnet consists of one or more HSE devices connected via Ethernet. HSE devices on a subnet may be interconnected with standard switches. Multiple HSE subnets may be interconnected using standard routers.

Table 8. FOUNDATION Fieldbus Terminology (Continued)

Term	Description
Link	A Link is the logical medium by which H1 Fieldbus devices are interconnected. It is composed of one or more physical segments interconnected by bus Repeaters or Couplers. All of the devices on a link share a common schedule which is administered by that link's current LAS. In FOUNDATION Fieldbus, the term link is only used on H1 (H1 link), not on HSE (Refer to HSE subnet).
Link Active Scheduler (LAS)	A Link Active Scheduler (LAS) is a deterministic, centralized bus scheduler that maintains a list of transmission times for all data buffers in all devices that need to be cyclically transmitted. At one point in time only one Link Master (LM) device on an H1 fieldbus Link can function as that link's LAS.
Linking Device	Refer to HSE Linking Device.

The following is a list of terms associated with HART that you should be familiar with.

Table 9. HART Terminology

Term/Acronym	Description
Device Type Manager (DTM)	Software component (device driver) for configuring, diagnosing, forcing, and displaying the measured variables, etc. of a field device. It is familiar with the way the device works and supplies device-specific documentation.
Device Description Language (DDL)	Interpretable language for the formal description of device parameters

Table 9. HART Terminology (Continued)

Term/Acronym	Description
Fieldbus device	Device connected through an Asset Vision Professional supported fieldbus. Examples are smart sensors and actuators, but also controllers, robots, variable speed drives, etc., when these devices are connected through a supported fieldbus.
Frame Application (FA)	Frame application (runtime environment) in accordance with the FDT specification for operating DTMs
Field Device Tool (FDT)	The FDT concept describes the interface between a Frame Application and the device-specific software (DTM = Device Type Manager) of the device manufacturer. It enables devices produced by different manufacturers and different fieldbuses to be integrated in a single system. Currently supporting fieldbus protocols for PROFIBUS and HART.
Highway Addressable Remote Terminal (HART)	Digital communication protocol developed for applications in industrial process control.

The following is a list of terms associated with Asset Optimization that you should be familiar with.

Table 10. Asset Optimization Terminology

Term/Acronym	Description
AO	Asset Optimization.
Asset Vision Professional Workplace	Provides a user interface for maintenance personnel to support their daily workflow most efficiently.

Table 10. Asset Optimization Terminology (Continued)

Term/Acronym	Description
Asset Monitor	Application responsible for retrieving data from, and interacting with, multiple data servers, OLE for Process Control ® (OPC®) servers, etc.). It analyzes the data and when necessary, issues an Asset Condition Document and notifies the user of the detected condition.
DPC	Documenting Process Calibrator / Communicator. Portable intelligent field calibrator or configurator designed for in situ (field) configuration and calibration, reducing the time required to execute a calibration procedure. The DHH800-MFC and the DHH810-MFT are examples of such devices.
Fieldbus device	Device connected through an Asset Vision Professional System supported fieldbus. Examples are remote I/O and smart sensors and actuators, but also controllers, robots, variable speed drives, etc., when these devices are connected through a supported fieldbus.
MFT	Multifunctional Modular Calibrator / HART Communicator.
SNMP	Simple Network Management Protocol. A network management standard that defines a strategy for managing TCP/IP and Internet Packet Exchange (IPX) networks.

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