



SYSTEM VERSION 1.4

ABB Field Information Manager User Guide





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ABB

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1 Learn and Understand

1.1 General information

ABB Field Information Manager (FIM) is a field device configuration tool based on FDI-Technology.

Get more information on

<http://www.abb.com/fieldinfo>

1.2 Connectivity to ABB Ability™ System 800xA

The Field Information Manager is supporting a connection to ABB Ability™ System 800xA. Please refer to

<http://new.abb.com/control-systems/fieldbus-solutions/fim/connectivities>

and find an instruction how to install and setup the connection.

1.3 ABB Ability™ Support

The Field Information Manager contains a OPC-UA server that is supporting ABB Ability™. Please get in contact with your local ABB service partner for more information.

1.4 Hardware and Software Requirements

Operating System Requirements

- Windows 7 64bit
- Windows 8.1, Windows 10, 64bit, desktop computers or touch pads
- Windows Server for the FIM800xAConnect software, that gets installed for System 800xA Connectivity. Please find more information about the supported Windows Server versions by referring to the System Guide Summary document 3BSE078159.
- 10 GB storage space, minimum of 1 Gigabyte RAM.

Supported HART FSK-modems

Field Information Manager (FIM) contains the ifak modem driver and is already prepared to support ABB/ifak HART modems listed below:

- ABB NDA121-NX USB (Ex ia)
- ABB NHA121-NO USB
- Ifak system isHRT USB
- Ifak system isHRT USBeX
- Ifak system H@RT BluePack

Other modems require a manual modem driver installation. The supported baud rates are: 1200, 9600, 19200, 38400, 115200.

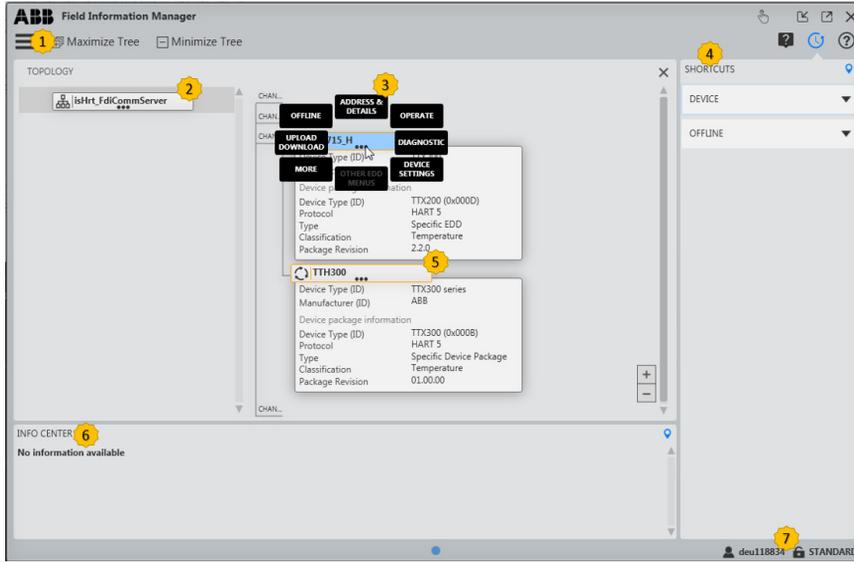
1.5 Installation and Upgrade

Please watch also the Frequently asked questions section for further information about required Windows patches and troubleshooting.

<http://new.abb.com/control-systems/fieldbus-solutions/fim/faq>

- The installation of the Field Information Manager will automatically upgrade older Field Information Manager versions.
- Please uninstall the Field Information Manager 1.0 version because this version does not support any upgrade.
- The installation of the Field Information Manager software requires administrator rights. Any other users can start the installation setup file, but during the installation procedure the system will ask for an administrator user and password.
- Normally, the installation will complete in less than 3 minutes, but might increase if the .Net framework is installed.
- The setup will install the Microsoft .Net framework automatically if required and reboot if necessary. After the reboot please start the setup file again. However, installing the .Net framework will delay the normal installation time.
- On Windows 7 computers please ensure that all Windows updates are installed before starting the setup.
- On nodes where the ABB Asset Vision Basic software is already installed, it is required to uninstall the "is HRT CommDTM v2" ifak communication driver.

1.6 Overview



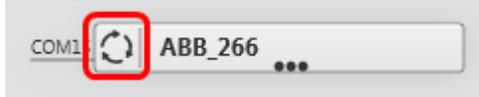
1. Tools Menu button
2. Communication Server Tile
3. Context Menu, available with a click on [...] icon of the Device Tile
4. Easy Access Wizard
5. Device Tile representing a field device
6. Info Center
7. User settings information

1.7 Device representation – Device Tile

A physical field device is represented as a graphical object called **Device Tile**. The most left side of the Device Tile shows the parent information, like the COM port that is used by the HART modem or the channel number if connected to an IO board.



Right beside the channel information the device status is shown indicating how the connection to the device behaves.



	Status Ok: The device is connected and accessible.
	Status Bad: The device is not reachable.
	Not assigned: This is an Offline Dataset without a physical device.
	This icon is used to indicate a Template.
	This icon is used to indicate a Device Package that is based on an FDI Device Package
	This icon is used to indicate a Device Package that is based on a fm8 EDD file

The device views and device functions are available on a Context Menu which will appear after a click on the Device Tile menu button.



The Device Tile object contains a preview functionality that provides access to the current open views which are belonging to the Device Tile. As soon as a view is open, the Device Tile object contains an icon to the right showing that open views exist. The user can click on that icon and gets access to the preview area.



1.8 Device Catalog

The Device Catalog is part of the Tools Menu and this is the place where to handle the Device Packages and fm8 EDD files. The user can import new Device Packages via drag & drop of the Device Package file into the tool. Each Device Package is represented as a Device Package Tile object. The Device Package information and functionality is available on a Context Menu that will appear after a click on the Tile.

Please find the set of ABB Device Packages by using this link

<http://new.abb.com/control-systems/fieldbus-solutions/fim/ABB-device-packages>

1.9 Topology Tool

The Topology Tool is part of the Tools Menu. Use the Topology Tool to navigate through the physical/logical network structure and to access devices. The Topology Tool consists of a tree navigation element to the left, and an area appearing to the right which shows the content of the selected tree object. The handling of the Topology Tool is very much similar to the handling of the Windows Explorer.

1.10 Configuration View

The Configuration Tool is part of the Tools Menu. Use the Configuration Tool to access to all available configurations in a flat list, like Device Dataset configurations, Offline Dataset configurations and Templates.

1.11 Device Identification and Scanning

The Topology Tree shows the general progress icon left beside a Tile object in the tree as soon as the scanning runs. In addition the Tooltip of the Tile object contains the scanning status information.

[HART modem and PROFIBUS modem](#)

The FIM supports Auto Scanning for modems. The Auto Scanning will identify the reachable physical devices automatically without any user interaction.

As soon as the Auto Scanning has identified a field device the Topology Tool will show the corresponding Device Tile. As soon as the concept of HART communication is slow the Auto Scanning will pause as soon as the user has opened a device view. In that case no further device is identified if just connected. After closing all views the Auto Scanning will continue the scanning for new devices again.

The Auto Scanning will remove a disconnected field device automatically from the UI. Disconnected devices cannot be removed as long as a device view is open and those devices will be marked with the Bad status icon in the Device Tile.

ABB Ability™ System 800xA

A manual scan is required to identify new hardware like controllers, modules and field devices. The Scan is supported via the Context Menu of the supporting objects, like 800xA Communication Server Tile object, or S800 module Tile object.

1.12 Device Package and Package Assignment

The FIM requires FDI Device Packages or EDD files in fm8 format to establish a connection to a device. The packages are stored in the Device Catalog which is available via the Tools Menu. The user can import new packages or EDD files via drag & drop. For new identified devices FIM will automatically use the best available package, but the user can replace the package to another one if needed.

Please find the set of ABB Device Packages by using this link

<http://new.abb.com/control-systems/fieldbus-solutions/fim/ABB-device-packages>

	<p>Used for Specific Device Package: The device vendor has designed this FDI Package.</p> <p>Used for Generic Device Package: An FDI Package usually designed by ABB. The package supports a reduced set of functions and is not as good as a Specific Device Package.</p> <p>For HART: The Generic Device Package supports Universal Commands and Common Practice Commands.</p>
	<p>Used for EDD fm8 file.</p> <p>Please note: The EDD fm8 format has been used for many years and was typically designed by the device vendor. Compared to an FDI package the fm8 EDD is good to use for online communications to the device, but might be limited in upload / download functionality and offline dataset handling. Very old EDDs might end up in communications errors as well.</p>

1.13 Device Views

Device Views are available for physically connected devices or for offline Device Datasets. The Device View header contains the word –DEVICE– if the view connects to a physical device, or the view header contains the work –OFFLINE– if the view connects to an Offline Dataset.

Most of the device views provide status information in front of the input element. The tooltip of these elements provides more details about the status. The following status information is available:

	LOADING: The value is loading.
	MODIFIED: The value was modified but not transferred so far.
	WARNING: Several warnings exist explained by the tool tip text.
	ALARM: Several alarms exist explained by the tool tip text.

1.14 Device Bar

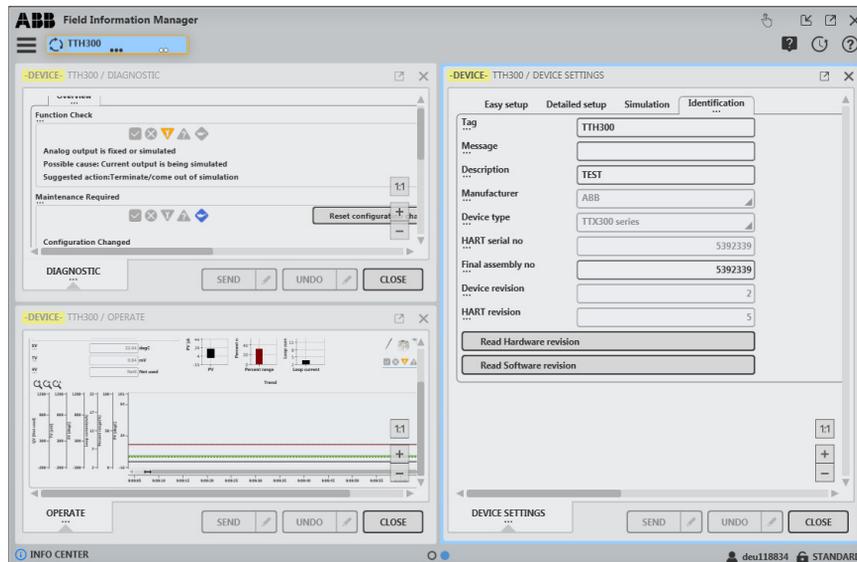
Any device containing open views will appear in the Device Bar. From the Device Bar the user can quickly access the Device Tile and open other views. As soon as all views are closed the corresponding device will disappear from the Device Bar.

The Device Bar location is on top of the FIM frame. Any blue selected Device Tile appearing in the Device Bar indicates that a corresponding device view is currently selected and owns the focus.



1.15 Multiple Device Views

A Multiple Device View consists of several views and can easily be shaped with a drag & drop of a “normal” view into another view. This version of FIM supports multiple views that consist of 4 single views. The user can drag & drop open views from the preview area into the currently visible view to create a multiple view. Inside a multiple view each single view can be dragged & dropped to a different position in the view.



1.16 Device Configuration

The right menu items of the Context Menu offer the FDI defined views for device configuration - DEVICE SETTINGS, device diagnostic - DIAGNOSTIC and device operation - OPERATE. These menus are only available as long as a device is connected and reachable.

1.17 Offline Configuration

The FIM contains a database that stores the device configurations in Offline Datasets. The user can change the device settings of an Offline Dataset. Offline Datasets which are not connected to a device are accessible via the Configuration Tool. The user can access the offline configuration with the Context Menu item OFFLINE.

1.18 Upload / Download Configurations

The user can upload the device configuration from the physical device into the Offline Dataset or download the offline configuration into the physical device via accessing the UPLOAD DOWNLOAD item of the ContextMenu.

1.19 Templates

The FIM supports device configuration templates that are used to prepare other datasets with the template content. Each template can be exported or imported as a file via the Configuration Tool. The import of template files is also supported via drag & drop.

1.20 Easy Access Wizard

The Easy Access Wizard is a navigation area in FIM appearing to the right. The user can pin the Easy Access Wizard if required.

	Click on the Easy Access Wizard icon to open up the wizard.
---	---

Favorites

The favorites in FIM are part of the Easy Access Wizard and provide an easy access to device parameter and device functions.

Three kinds of favorite categories are available.

Favorite	The user specifies a favorite on device views via the [...] button that is positioned close to the parameter name
Frequently Used	The FIM manages this list based on the usage of device parameter
Last Used	The FIM records the changes on device parameter and calculates a list of parameter that have been used last

Each favorite shows an icon in front of the favorite name that specifies either if the favorite is a device parameter or a device menu / function.

	This icon defines a device parameter
	This icon is used for several elements, like groups, tabs, etc.

Offline Vs Online Favorites

The FIM supports favorites for connected physical devices as well as for offline device configurations. As soon as the user works with a Device View the FIM will automatically switch to the favorites related to that view. However, the user also can select the Favorites Online or Offline section manually if required.

1.21 Info Center

The FIM reports activities in the Info Center, like running bulk activities. The Info Center is an area that is usually temporary on screen and disappears automatically. The Info Center is available on the left bottom part of the tool frame. The user has the option to pin the Info Center to be able to stay on the screen permanently.

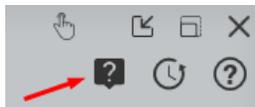
1.22 Optimized Touch Handling

The FIM supports the user when working with touchable devices, like touch pads or touch monitors. Several controls will appear in an optimized design as soon as the FIM enables optimized touch handling. The user can set the optimized touch handling via the "hand" icon.



1.23 Tooltips and Tooltip-Picker

Tooltips are mostly required when working with Device Views, like Device Settings for example. The general Tooltip is designed to show how to use the mouse pointer which does not work on touch devices. The Tooltip-Picker is an element which will show the Tooltip. The picker is available on the upper right area of the FIM main frame. The user can move the picker control to an element in the tool and as soon as the picker hits the element the FIM will show the associated Tooltip.



1.24 HART Generic Device Package

The Generic Device Package supports HART Universal- and Common Practice Commands. The package is prepared to get used for each HART device which is available on the market. However, when available, a Device Package supplied by the instrumentation vendor should be used.

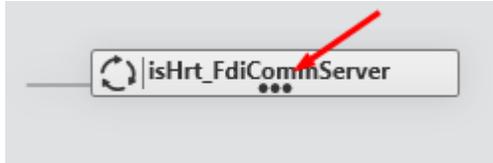
Please find the set of ABB Device Packages by using this link

<http://new.abb.com/control-systems/fieldbus-solutions/fim/ABB-device-packages>

1.25 Communication Server Settings

The contains Communication Servers which are used for the communication between the FIM software and other software or hardware, like a HART modem. The Communication Server settings are available via the Context Menu of the corresponding Device Tile.

Example for the HART Communication Server: Use the [...] icon and get access to the server settings.



1.26 License Handling

Usually the FIM is available as one setup file containing all the available functionalities no matter which edition of FIM is used. But it might be that for the FIM connection to other systems, like ABB Ability™ System 800xA, additional setup files are required.

The Device Window Edition of FIM enables a point-to-point connection with a HART modem and a physical HART device. This edition is active after installing the FIM. The edition is free of charge and mainly used to get started.

Any other edition of FIM requires a valid license file to enable. Please import the license file via drag & drop into the FIM main frame.

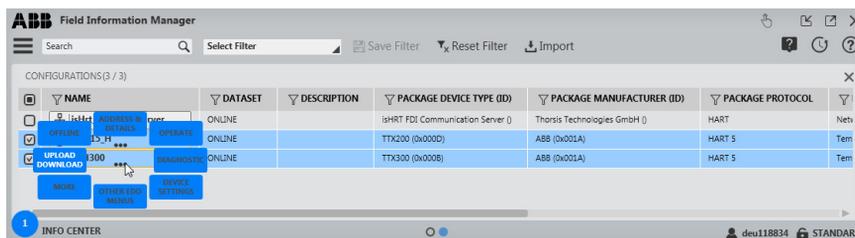
Please find more information about the different license options on

<http://www.abb.com/fieldinfo>

1.27 Bulk Operations

The FIM supports several kind of bulk operations, like uploading the device configurations from several devices in bulk, or removing several Device Packages in bulk.

The Configurations Tool and the Device Catalog are supporting bulk operations. First please check mark one or several Device Tiles via the checkbox of the first column in the view. Then please call up the Context Menu of any of the check marked Device Tiles. The upcoming menu is called Bulk Context Menu. From here any started operation will run for all the check marked Device Tiles in bulk.



Each started bulk operation is documented in the FIM Info Center.

1.28 Managing Projects

By default, a project is created when you start the Field Information Manager for the first time after a fresh installation. A Field Information Manager project saves all the contained offline datasets, the offline templates and the content of the Topology Tool and tree. The Device Catalog with Device Packages, Fimlets and EDD files, is used by all projects which are available on the Field Information Manager client, but is also saved in the project file (.fimprj) as soon as a project is exported.

With a Field Information Manager project you can:

- Continue work on a project at a later time
- Switch between projects if you are working on several systems with the same FIM computer client
- Share the project with others and move it to another computer
- Create project templates with general settings, Device Packages and template datasets, and share the templates with others

The Field Information Manager project management is available via Projects Tools Menu.

1.29 Tag Mapping

FIM contains a functionality that automatically syncs the names that are usually required to identify a field device. This functionality is part of the Synchronization options which are available in Projects Tools Menu.

The following names are available in FIM:

- Device Tag: The identifier name that exists in the parameter set of the physical device
- Device Name: The name of the Device Tile object in FIM
- Offline Dataset Tag: The identifier name that exists in the parameter set of the offline database

HART 5 standardization supports TAG parameter names limited to 8 characters, but usually the TAG concept of the projects require more than 8 characters. HART 7 standardization contains a LONG TAG parameter that is limited to 32 characters, but at the moment the penetration of HART 7 devices in projects is very rare. Due to that some projects are using as well the MESSAGE parameter of HART 5 devices as the identifier. This parameter is limited to 32 characters.

FIM is supporting the use of as well the TAG, LONG TAG, or MESSAGE parameter as the tag identifier. In the FIM Project options (accessible via the Tools Menu) the Synchronization area specifies which device parameter should be used for the tag identifier. As soon as enabled any change on the Device Name in FIM (the name of the Device Tile object) will automatically sync the tag identifier of the physical device and corresponding offline dataset in FIM.

1.30 Language Support and Language Packs

In the Language Options the user can change the language of the FIM tools texts and device views. The device views are based on the Device Package information. If the Device Package does not contain the selected language then the default language will be used for the device views. The default language is English language.

A set of the most used languages is part of the FIM installation and the user can select one of these languages. But the FIM installation contains only English and German language completely. All the other selectable languages require a Language Pack to ensure that all the tool texts are displayed in that language. The released Language Packs are available via <http://www.abb.com/fieldinfo>.

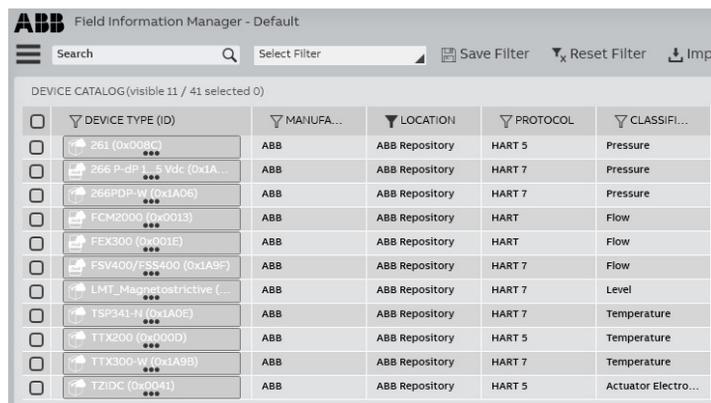
A Language Pack can be installed via drag & drop of the Language Pack file into the tool. An overview of the already installed Language Packs is available via FIM Options - Info page.

1.31 ABB Cloud Repository

The ABB Cloud Repository is a cloud-based storage, which contains ABB FDI Device Packages, EDDs and definitions files for ABB communication hardware. If an internet connection is available, then FIM checks the ABB Cloud Repository for updated contents when the application starts.

All FDI Device Packages of the ABB Cloud Repository will be shown in the Device Catalog of FIM. A special cloud package icon indicates that the FDI Device Package is available in the ABB Cloud Repository, but currently not downloaded into FIM. In order to use the FDI Device Packages from the ABB Cloud Repository the user has to download the Package via the Context Menu – DOWNLOAD.

It is also possible to exchange the used FDI Device Package for each field device. Via the Context Menu – MORE – REPLACE DEVICE PACKAGE also the FDI Device Packages of the ABB Cloud Repository will be offered. If the user selects a FDI Device Package of the cloud, then it will be downloaded and assigned automatically.



DEVI...	DEVICE TYPE (ID)	MANUFA...	LOCATION	PROTOCOL	CLASSIFI...
<input type="checkbox"/>	261 (0x006C)	ABB	ABB Repository	HART 5	Pressure
<input type="checkbox"/>	266 P-dp L...5 Vdc (0x1A...	ABB	ABB Repository	HART 7	Pressure
<input type="checkbox"/>	266PDP-W (0x1A06)	ABB	ABB Repository	HART 7	Pressure
<input type="checkbox"/>	FCM2000 (0x0013)	ABB	ABB Repository	HART	Flow
<input type="checkbox"/>	FEX300 (0x001E)	ABB	ABB Repository	HART	Flow
<input type="checkbox"/>	FSV400/FSS400 (0x1A9F)	ABB	ABB Repository	HART 7	Flow
<input type="checkbox"/>	LMT_Magnetostriptive (...)	ABB	ABB Repository	HART 7	Level
<input type="checkbox"/>	TSP341-N (0x1A0E)	ABB	ABB Repository	HART 7	Temperature
<input type="checkbox"/>	TTX200 (0x0000)	ABB	ABB Repository	HART 5	Temperature
<input type="checkbox"/>	TTX300-W (0x1A9B)	ABB	ABB Repository	HART 7	Temperature
<input type="checkbox"/>	TZIDC (0x0041)	ABB	ABB Repository	HART 5	Actuator Electro...

1.32 Compare Datasets

The Compare Datasets function offers the possibility to compare:

- The offline and online datasets of a field device
- The online datasets of different field devices
- The offline datasets of different field devices or templates

The function can be started via the context menu – MORE – COMPARE. Bulk operations are supported, too.

The comparison leads to the following results:

- **Equal:** All parameters that exist in both datasets are equal. If the datasets contain different parameters, the subset of the parameters is equal. This is often the case when online and offline datasets are compared.
- **Mismatch:** at least one compared parameter contains different values. The user can take over parameter values from one dataset to the other by using the “<” and “>” buttons.
- **Not comparable:** The datasets cannot be compared by FIM. Most likely the parameters of the datasets does not match each other. This can happen if completely different field devices will be compared.

The screenshot shows the ABB Field Information Manager interface. At the top, it says 'ABB Field Information Manager - Default'. Below that, there's a search bar with 'TAG_TTX' and a 'Reset Filter' button. The main area is divided into three columns: 'COMPARE RESULTS', 'ONLINE', and 'OFFLINE'. The 'COMPARE RESULTS' column shows 'mismatch'. The 'ONLINE' and 'OFFLINE' columns show 'TAG_TTX'. Below this, there's another search bar with 'visible 29 / 29' and another 'Reset Filter' button. The main table has columns for 'Name', 'ONLINE', 'OFFLINE', and 'COMPARE RESULT'. The table lists various parameters and their values for both datasets, with the comparison result in the last column.

Name	ONLINE	OFFLINE	COMPARE RESULT
Lower range value	2.11	1	mismatch
Upper range value	111	100	mismatch
Damping	0	0	ok
Description	DESC	DESC	ok
Elec2 units	250	250	ok
Electr. temp units	degC	degC	ok
Final assembly no	0	0	ok
HI HI Limit	10000	10000	ok
HI Limit	9999	9999	ok
Last change	08.04.2017 00:0...	08.04.2017 00:0...	ok
LO Limit	-9999	-9999	ok
LO LO Limit	-10000	-10000	ok
Long tag	long_tag_7	long_tag_7	ok
Maint. pulse time	0	0	ok

2 Troubleshooting

In addition to the following topics please watch the FAQ area on
<http://new.abb.com/control-systems/fieldbus-solutions/fim/faq>

2.1 Contact ABB support for troubleshooting

Use this option if you request the support of an ABB expert. The FIM will automatically generate a bunch of log files containing all information for troubleshooting.

1. Open the Options of the FIM Tools Menu.
2. Select the option TECHNICAL SUPPORT
3. On the view appearing to the right please read the describing steps and select the START button.

2.2 Tool shutdown even when activities are ongoing

The user can stop the FIM even when activities are ongoing, such as device modal dialog requires a user input, or a bulk operation is running.

Usually the FIM is waiting until all activities have been ended before closing itself. However, there might be situation that the user needs to stop the FIM right now.

Please note that a hard stop of FIM might cause device problems as soon as any ongoing communication is interrupted and the device might remain in a status being inoperable.

1. Assume the user has tried to stop a User Interface Plugin with a click on the ABORT button, but the User Interface Plugin remains open for a few minutes. Now the user decides to interrupt FIM.
2. The user clicks the FIM close button to stop the tool.
3. FIM generates a message explaining that there are modal dialogs open which prevent the tool from closing.
4. The user accepts that message and clicks the FIM close button a second time.

5. FIM generates another message explaining that the user can force the tool for closing.
6. The user accepts that message and selects the YES button.
7. FIM has been stopped.

2.3 Device is not identified by the Auto Scanning - HART modem

Please use the Context Menu item DIAGNOSTIC for the HART Communication Server and start a diagnostic scan for the com port where the HART modem is connected to. The scan will run in multi drop mode and will go through all possible channels and baud rates, and the scan will report the identified field devices right now in the result list.

If the diagnostic scan is not able to identify the field device, then please validate that the HART modem connects successfully to the computer node, and that the device connects to the HART modem in a proper way. In most cases a wrong or defect hardware setup between computer node, HART modem and device is the problem cause.

If the problem still persists, then please get in contact with ABB technical support.

In addition, the FAQ section "Communication" shows examples of the wiring between HART modem and field device for sensors and actuators. The FAQ section is available via this link:

<http://new.abb.com/control-systems/fieldbus-solutions/fim/faq>

2.4 Installation or Un-installation fails

Please refer the FAQ describing Installation Un-installation on

<http://new.abb.com/control-systems/fieldbus-solutions/fim/faq>

2.5 License fails

The FIM license file is linked to a Machine ID. The Machine ID is a unique identification representing the physical address of a network adapter in the Windows Operating System. Depending on the computer hardware the number of network adapters are different. For example, a laptop computer sitting in a docking station contains more network adapters as a touch pad. It is important that the linked Machine ID of the license file and the corresponding network adapter has to be enabled.

Some computer hardware disables the network adapters automatically if not used. This is usually caused by the power options of that computer node. A disabled network adapter is no longer visible in the Microsoft Operating System and therefore not visible for FIM either. If a FIM license is linked to a Machine ID where the corresponding network adapter has been disabled, then the FIM will signalize that the license fails.

If FIM reports a license error, or the license file might not get loaded because FIM is saying that the file is not valid, then please compare the license file Machine ID with the available Machine IDs of your computer. The FIM options page LICENSE HANDLING provides such information.

For further information please watch the FAQ License Handling on

<http://new.abb.com/control-systems/fieldbus-solutions/fim/faq>



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