

OMC System Software
High-performanceHMI
HMI Config Software
User Manual
IM41S64-E

Table of Contents

HMI Config Software.....	1
Section 1 Overview.....	1
1.1 Functions Introduction	1
1.2 Technical Specification	1
Section 2 Startup Method of VFHMICfg	3
Section 3 Main Interface.....	5
Section 4 Operation Team Configuration	7
4.1 Add Operation Team.....	7
4.2 Overview Window Configuration	8
4.3 Data Viewer Window Configuration	12
4.4 Tuning Group Window Configuration.....	14
4.5 Trend Window Configuration	18
4.5.1 Add Trend.....	18
4.5.2 Add Referenced Domain Tag.....	25
4.5.3 Configure Maximum Number of Tags	27
4.5.4 Configure Tag list in Trend.....	28
4.5.5 Specify Width of Trend Line.....	29
4.6 Graphics Configuration.....	30
4.6.1 Add Graphics to Operation Team	30
4.6.2 Add Custom Group.....	30
4.6.3 Add Graphics Page	31
4.6.4 Resource Reference	33
4.6.5 Inter-domain Reference.....	34
4.6.6 Import/Export Graphics Configuration	35
4.7 Add Report	36
4.8 Add Inter-domain Alarm	38
4.9 Schedule Configuration	40
4.9.1 Schedule Configuration Interface	43
4.9.2 Menu/Toolbar Command	43
4.9.3 Configuration Instruction	44
4.9.4 Run Schedule.....	53
4.10 Custom Key Configuration.....	54
4.10.1 Create Custom Key	54

4.10.2 Custom Key Shows Alarm Status	57
4.10.3 Switching Rules of Custom Keys.....	57
4.11 Alarm Region Setting	58
4.12 Alarm Panel Setting	61
4.13 Alarm Sound Setting.....	64
4.13.1 Sound Alarm Rule	65
4.13.2 Configuring Alarm Sound	67
4.13.3 Configure OMS Voice Alarm.....	71
4.13.4 Alarm Silence	71
4.14 Real-time Alarm Print Setting	71
4.15 Alarm Pop-up Settings.....	76
4.16 Tag Associated Graphics Setting	79
4.16.1 Instruction.....	79
4.16.2 Configure the Import/Export	81
4.16.3 Monitoring status	82
4.17 Tag Associated Trend Display Setting	83
4.17.1 Configuration in VFHMICfg	83
4.17.2 Configure the Import/Export of Tag Associated Trends	85
4.17.3 Monitoring Status.....	86
4.18 Operation Instruction	87
4.18.1 Start Configuration.....	88
4.18.2 Configuring Operation Instruction of Normal Messages	89
4.18.3 Configure Operation Instruction of Phase/SFC Messages	91
4.18.4 Configure Whether to Enable OMS Message	92
Section 5 Domain Configuration	93
5.1 Domain Variable Configuration	93
5.2 Supervising User Authority	94
5.3 History Trend Configuration	94
5.3.1 History Trend Configuration Interface	94
5.3.2 Menu function.....	96
5.3.3 Configuration Instruction	96
5.3.4 Tag Filter.....	102
5.4 Custom Alarm Group	104
5.4.1 Add Alarm Group	105
5.4.2 Delete alarm group.....	105
5.4.3 Filter of optional tags	105

5.4.4 Add tags in the custom alarm group	106
5.4.5 Remove tags in the custom alarm group	107
5.4.6 Search selected tag quickly	108
5.4.7 Import and Export	108
5.5 Custom System Alarm	109
5.6 Panel Authority Configuration	111
5.6.1 Open configuration software	111
5.6.2 Extend confirmation interval configuration	112
5.6.3 Panel authority configuration	113
5.7 Batch Configuration	114
5.8 Shelve Alarm	115
5.8.1 Instruction	115
5.8.2 Configuration Steps	116
5.8.3 Self-define Alarm Shelve Reason	117
5.8.4 Export and Import	118
5.9 Manage State	119
5.9.1 New Device and Related Tag	120
5.9.2 Add State Definition	120
5.9.3 Configure Alarm Operation	121
5.9.4 Import/Export State Configuration	134
5.9.5 State Expression	135
5.10 Alarm Help	136
5.10.1 Configure Types of Alarm Help	137
5.10.2 Configure Alarm Help as per Alarm Help Templates	137
5.10.3 Import Alarm Procedure Documents	140
5.11 Video Monitor Configuration	142
5.11.1 Configuration Steps	142
5.11.2 Video Monitor	142
Section 6 Resource File	143
6.1 New resource file	144
6.2 Create New Folder	144
6.3 Delete resource files	145
6.4 Update resource files to local	146
6.5 Find resource files	146
6.6 Save to Configuration Server& Save to Configuration Server and Keep Locked	147
6.7 Unlock resource files directory	147

6.8 Online publish.....	147
6.9 Export/Import Resource File.....	148
6.9.1 Export File	148
6.9.2 Import File	149
6.10 Import/Export Resource Folder	149
6.10.1 Export Resource Folder	149
6.10.2 Import Resource Folder.....	149
Section 7 Configuration Publish	151
Section 8 Other Functions	152
8.1 Reuse Configuration of Operation Team	152
8.1.1 Export Operation Team Configuration	152
8.1.2 Import Operation Team Configuration	152
8.2 Export Tag Usage Information	153
8.3 Cut and Copy the Configuration Tree Nodes.....	154
8.4 Delete the Nodes in the Configuration Tree.....	158
8.5 Show/Hide Toolbar and Status Bar	158
8.6 Save and Compile	158
Section 9 Revision.....	160

HMI Config Software

Section 1 Overview

1.1 Functions Introduction

VFHMICfg (VFHMICfg.EXE) mainly provides the function of supervising the configuration of relative contents needed for normal running under a single operation domain in configuration mode.

It mainly includes operation team configuration and some unified settings under the operation domain, of which, the former one mainly includes: Overview Window, Data Viewer Window, Tuning Group Window, Trend Window, Operation guide, Graphics, Report, Schedule, Customized Key-press, Alarm Section, Alarm Panel, Alarm Sound, Real-time Alarm Print, Tag Associated Graphics and Tag Associated Trend Window.

Unified settings under the operation domain are: Domain Variables, Supervision User Authority, History Trend, Customized-alarm Group, Panel Authority, Shelve Alarm, Manage State and Procedure of Alarm.

1.2 Technical Specification

- Number of operation teams: 32
- Operation team name: 64 English characters or 32 Chinese characters
- In one single operation team, the maximum number of configured graphics is 1000, and maximum number of other configured pictures is 500.
- Maximum number of alarm groups: 200.
- Maximum number of customized key-presses: 36. The number of supported custom keys is based on the matching operator keyboard.
- Number of trend controls on a single page: 4.
- Number of tags in a single trend control: 8.
- Number of schedules (maximum number of schedule files in an operation team): 10.
- Support multiple-use of operation team configuration

Configuration of overview, data viewer, trend, graphics, tag associated graphics, and tag associated trend window can be imported/ exported as CSV file. Configuration of tag associated graphics can only be exported as CSV file.

- Support Referenced Domain Tag

Referenced domain tags can be add In configurations of trend, graphics and alarm panel.

- **Shelve Alarm**
Operator can shelve alarm temporarily to avoid nuisance via alarm shelve. The shelved alarm will be restored automatically when reaching the shelve time. Maximum 10 shelves reasons and 8 self-define shelves can be configured in VFHMICfg.
- **Manage State**
State refers to common work scene in field, such as startup, running and shut-down, etc. VFHMICfg can configure state management via defining key equipment and tag, state and alarm. VFHMICfg supports maximum 100 devices and maximum 500 tags in one device. Device only supports tag associated to the operation domain.
- **Procedure**
VFHMICfg support define tag's procedure, and procedure file is file in .doc format. Procedure file, defines items such as generation reason, operation suggestion and possible result of tag alarm. After configuring procedure in VFHMICfg, and the alarm contained in procedure occurs in real-time monitoring, the procedure file related to tag alarm will pop up.

Section 2 Startup Method of VFHMICfg

1. Select an operation domain of HMI in VFExplorer, and pop up a right-key menu, as shown in the Figure 2-1.

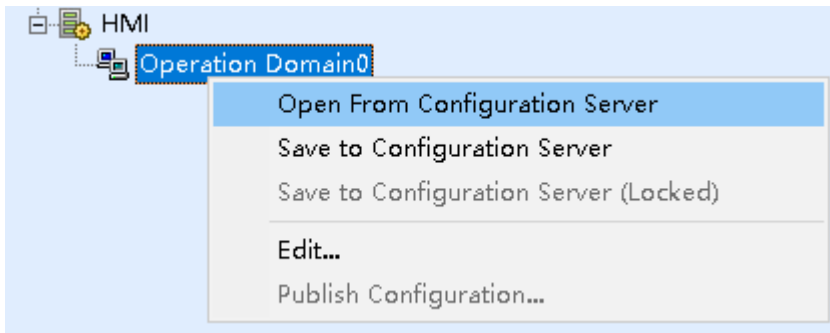






Figure 2-1 Open VFHMICfg

- **Open from Configuration Server:** Download the latest configuration from the server, lock the current operation domain and open VFHMICfg.
- **Save to Configuration Server:** Upload local configuration to the server and unlock the current operation domain.
- **Save to configuration server (Locked):** Upload local configuration to the server and keep the current operation domain locked.
- **“Edit”:** Open VFHMICfg window (If the current operation domain is unlocked, click “Edit” and download the latest configuration from the server. The current operation domain will not be locked in this way and supervision software will be opened in read-only mode. At that time, users can only edit the resource files in the VFHMICfg.)

Under the “Lock” status of current operation domain, the menu may have the following three situations:

- Current operation domain hasn’t been locked by any engineer, and there is no marker on the operation domain node , at this time, the operation of “Open from Configuration Server”, “Save to Configuration Server” and “Edit” can be done.
- Current operation domain has been locked by current engineer, and a “Red Hook” is shown on the operation domain node , at this time, all of the operations can be done, except for “Open from Configuration”.
- Current operation domain has been locked by other engineers or by current engineer at other operation stations, and a “Blue Hook” is shown on the operation domain node , at this time, none of the operations cannot be done, except for “Save to Configuration Server” and “Edit”.

2. Select “Open from Configuration Server”, and then the selected operation domain in

the configuration management software will have a red hook marker  (meaning locked by local computer). Meanwhile the VFHMICfg window will be opened.

Section 3 Main Interface

The main interface of VFHMICfg is shown in Figure 3-1.

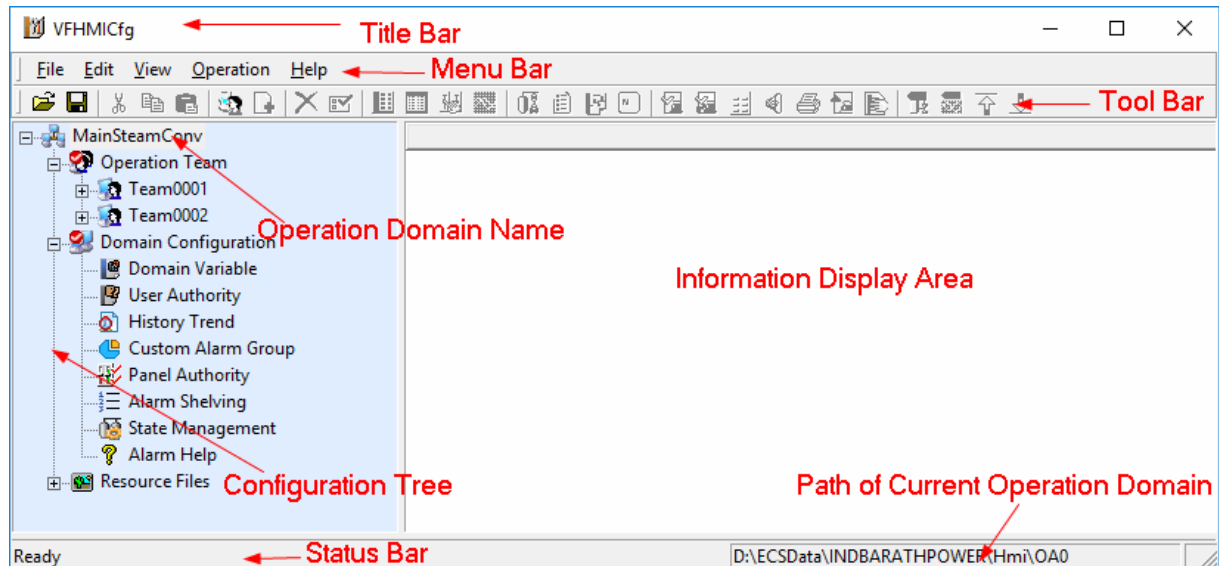
















Figure 3-1 VFHMICfg window

Introduction to Menu Bar & Toolbar


Table 3-1 Menu bar and toolbar functions introduction

Menu	Submenu	Icon	Function
File	Open (Ctrl+O)		Open an existing document
	Save (Ctrl+S)		Save active document
	Save and Compile (Ctrl+Shift+C)		Save configuration and compile it
	Exit (X)		Exit the application program; prompt to save the document
Edit	Cut (Ctrl+X)		Cut the selected object and copy it to clipboard
	Copy (Ctrl+C)		Copy the selected object and copy it to clipboard
	Paste (Ctrl+V)		Insert clipboard content
View	Toolbar		Show or hide toolbar
	Status Bar		Show or hide status bar
Operation	Add Operate Team		Add an operate team
	Add		Add (one page window, etc.)
	Delete		Delete (one page window, etc.)
	Set/Cancel Default Page		Set/Cancel graphics default page
	Add Overview Window		Add overview window
	Add Data Viewer Window		Add data viewer window
	Add Tuning Group Window		Add tuning group window
	Add Trend Window		Add trend window
	Add Graphics		Add graphics

Menu	Submenu	Icon	Function
	Add Report		Add report
	Add Schedule		Add schedule
	Add Custom Keys		Add customized key
	Add Operation guide		Add operation guide
	Add Alarm Region		Add alarm section
	Add Referenced Domain Alarm		Add referenced domain alarm, enable when the operation domain adds referenced domain
	Add Alarm Panel		Add alarm panel
	Add Alarm Sound		Add alarm sound
	Add Alarm Real-time Print		Add real-time alarm print
	Add Alarm Popup		Add alarm pop up
	Add Tag Associated Graphics		Add tag associated graphics
	Add Tag Associated Trend Window		Add tag associated window
	Move Up Page Number		Move up page number, adjust sequence of Overview Window, Data Viewer Window, Tuning Group Window, Trend Window, etc.
	Move Down Page Number		Move down page number, adjust sequence of Overview Window, Data Viewer Window, Tuning Group Window, Trend Window, etc.
	Import Res File		Import res file
	Export Res File		Export res file
	Export Tag Usage Information		Export tag usage information from operation domain to csv file as required.
Help	About		Show program information, version number and copyright

Section 4 Operation Team Configuration

4.1 Add Operation Team

Right-click the operation team in the VFHMICfg window and select “Add Operation Team” in the pop-up menu, or select **Operation/Add Operation Team** in the menu bar, or click the icon  in the toolbar, and the operation team “Team0001” is added, and the window as shown in the Figure 4-1. The trend window, graphics and alarm section are added automatically in the operation team.

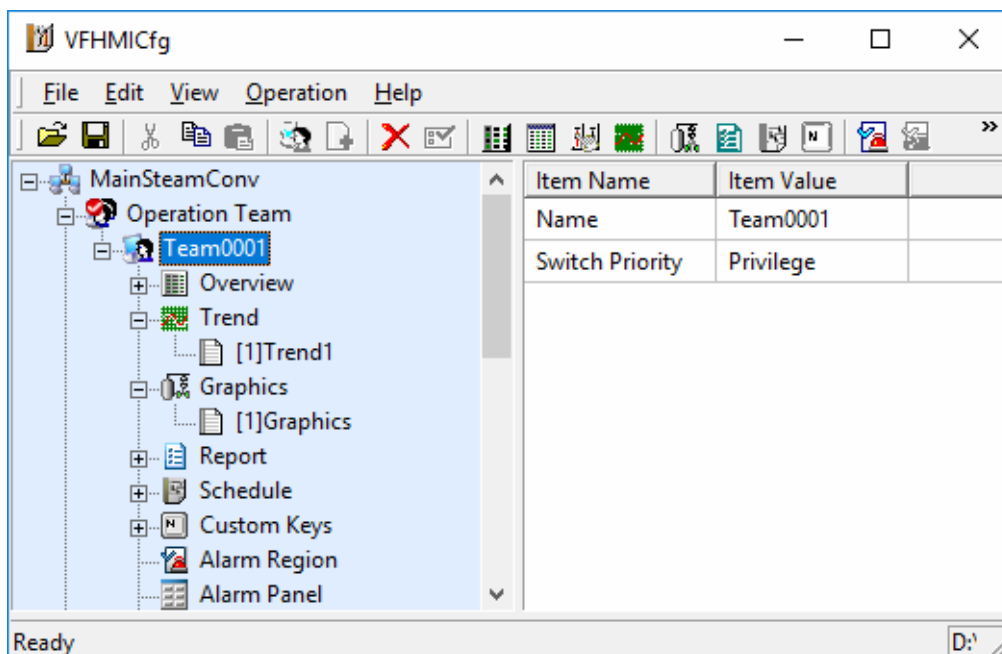


Figure 4-1 Add operation team “Team0001” window

The operation team is named as “Team0001” by default, the relative properties of which can be modified by clicking “Team0001”. Shown as in the Figure 4-2, modify the operation team name to: “Unit1”, and switch the priority to: Privilege.

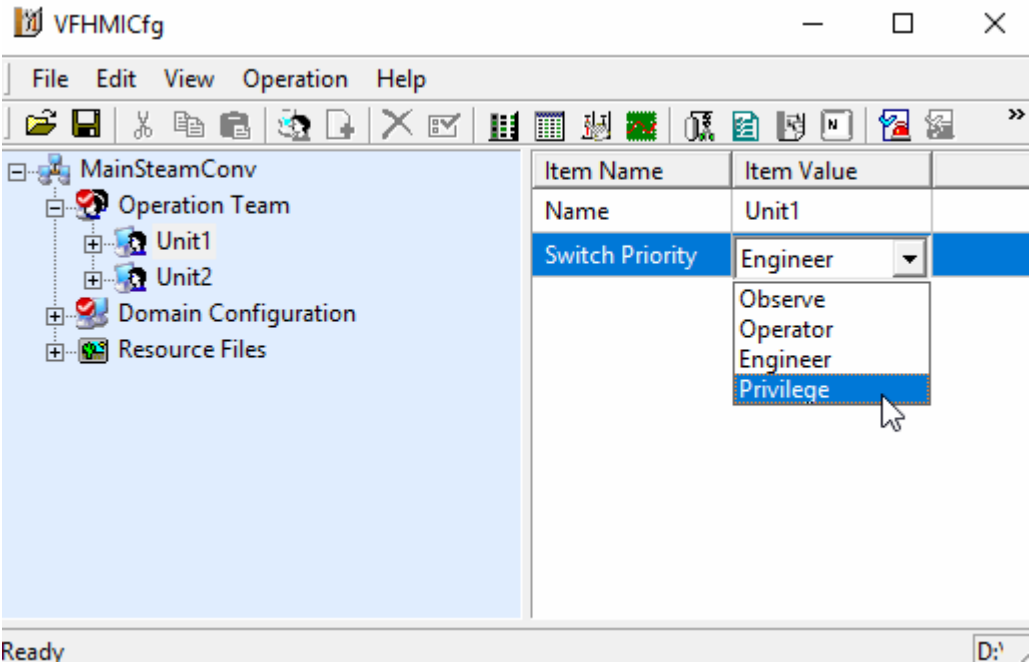



Figure 4-2 Modify operation team properties

4.2 Overview Window Configuration

Right-click operation team “Unit1” in the VFHMICfg window, and select “Add Overview Window” in the pop-up menu, or select **Operation/Add Overview Window** in the menu bar, or click the icon  in the toolbar, and an overview window named as “Overview1” by default is added, as shown in the Figure 4-3.

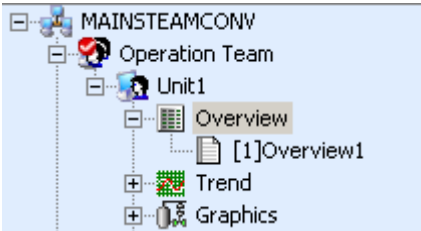



Figure 4-3 Add overview window in the operation team

Right-click “Overview” in Figure 4-3, and select “Add Page” in the pop-up menu, or select **Operation/Add** in the menu bar, or click the icon  in the toolbar, and a new page of overview window is added and users can modify the page number and description of the new overview page (Page number must be a positive integer between 1 and 500 and description should be limited within 64 characters), as shown in the Figure 4-4.

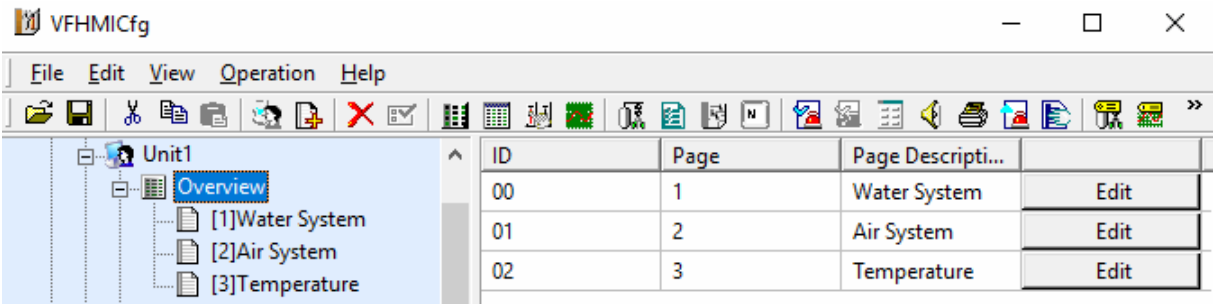


Figure 4-4 Add an overview window page in operation team

Double-click “Water System” at the left or click “Edit” at the right, and the pop-up window as shown in Figure 4-5.

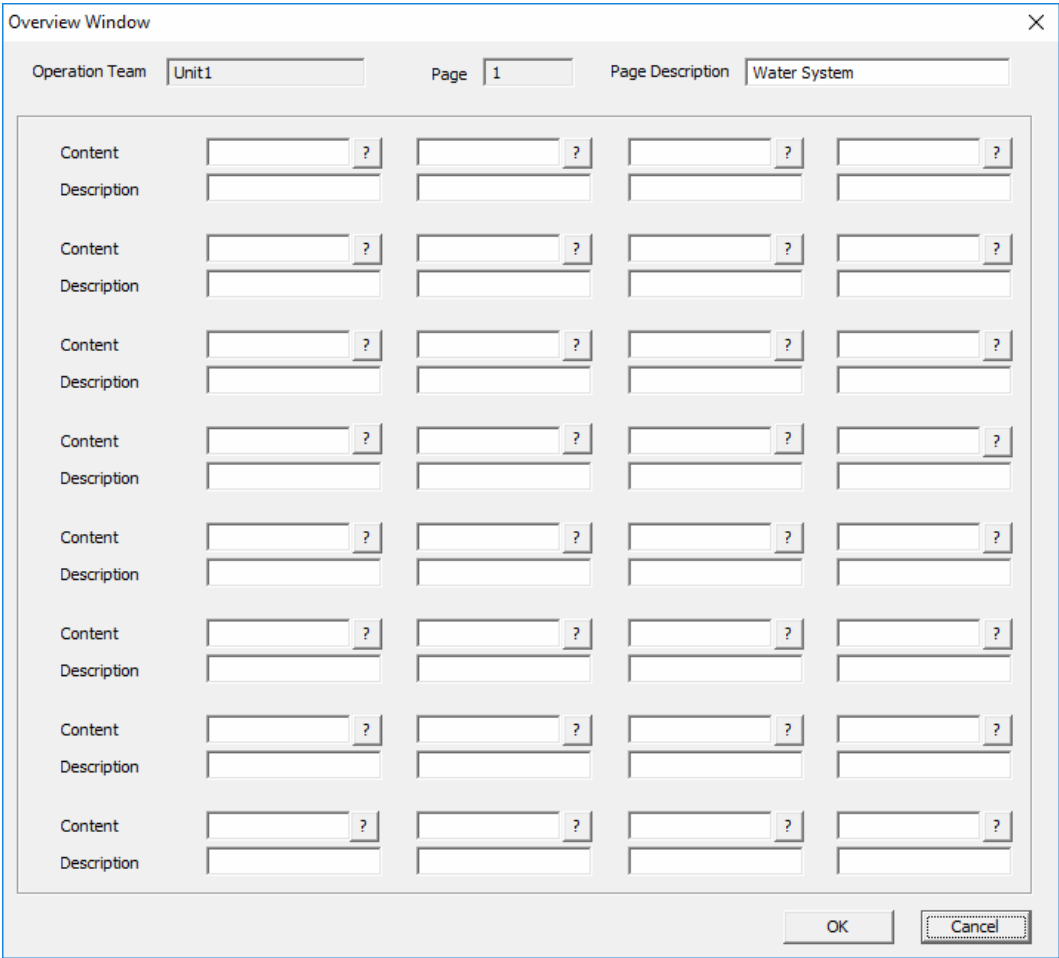


Figure 4-5 Configuration window of overview window

Users can also click “Water System”, and the configuration window of overview window is shown below.

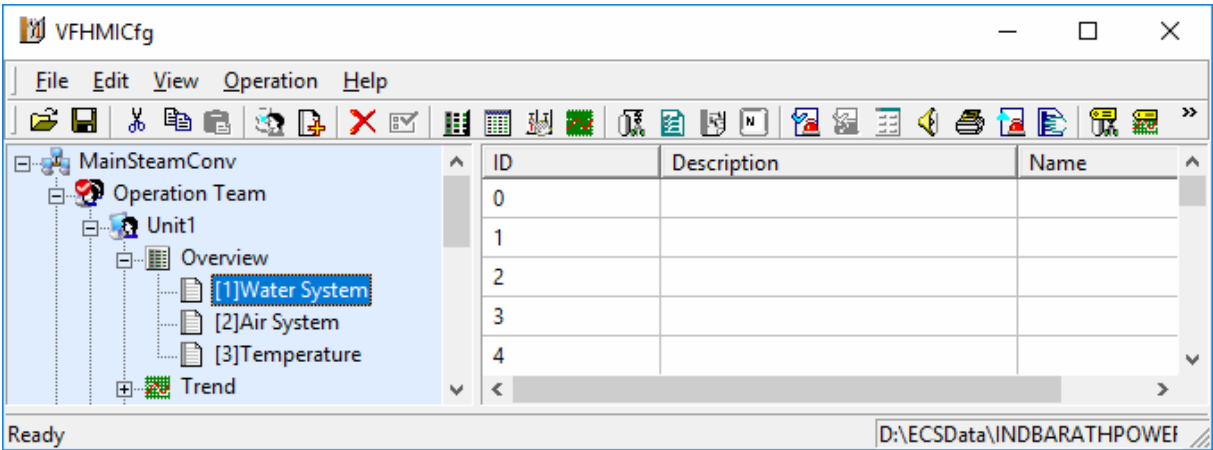



Figure 4-6 Overview window of unset tags

Each page of overview window can display 32 tags data and description at a time and can also be used as the index of overview window page, tuning group window page, trend window page, graphics window page and data viewer window page. Overview window is also one of the standard windows.

Click query button  in Figure 4-5 or Figure 4-6, the pop-up overview setting window as shown in Figure 4-7. Select one tag (or one window object) in this window, and press “OK” button, and tag or window object is added successfully to corresponding position in the overview window.

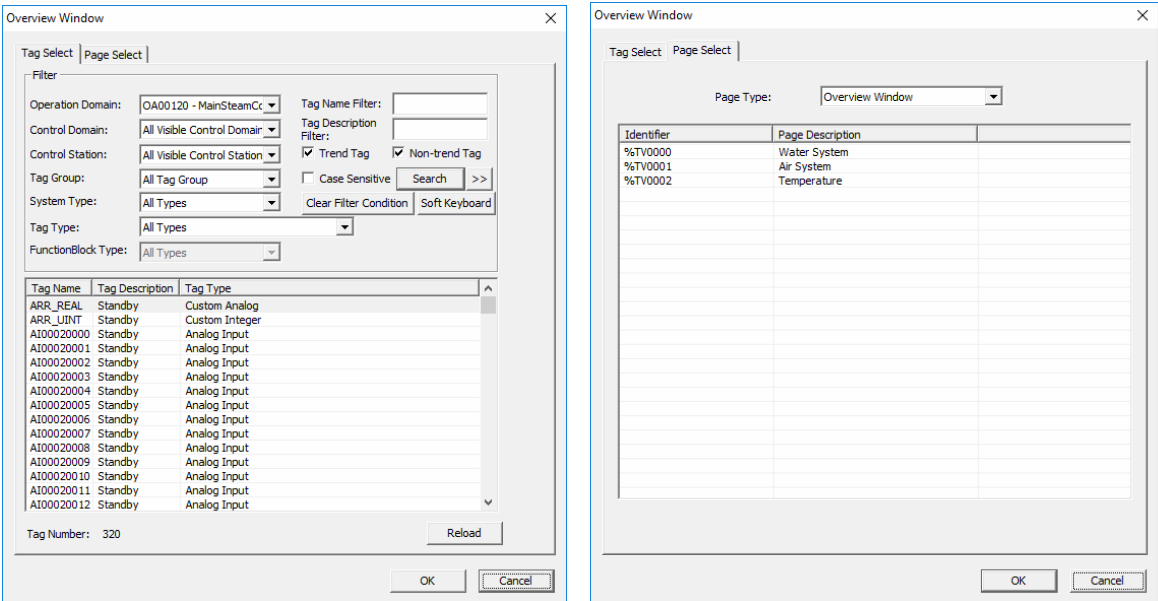



Figure 4-7 Overview setting window

Add Referenced Domain Tag to Overview Window

If the operation domain of operation team references the operation domain of other project, the referenced operation domain can be monitored in overview window. Operation steps:

1. Click query button  in Figure 4-5 or Figure 4-6, the pop-up overview setting window as shown below.

Overview Window

Tag Select | Page Select

Filter

Operation Domain: OA5375

Control Domain: All Visible Control Domain

Control Station: All Visible Control Station

Tag Group: All Tag Group

System Type: All Types

Tag Type: All Types

FunctionBlock Type: All Types

Tag Name Filter:

Tag Description Filter:

☒ Trend Tag ☒ Non-trend Tag

☐ Case Sensitive

Search >>

Clear Filter Condition Soft Keyboard

Tag Name	Tag Description	Tag Type
AO00020000		Analog Output
AO00020001		Analog Output
AO00020002		Analog Output
AO00020003		Analog Output
AO00020004		Analog Output
AO00020005		Analog Output
AO00020006		Analog Output
AO00020007		Analog Output
AO00020008		Analog Output
AO00020009		Analog Output
AO00020010		Analog Output
AO00020011		Analog Output
AO00020012		Analog Output
AO00020013		Analog Output
AO00020014		Analog Output

Tag Number: 108

Reload

OK Cancel

Figure 4-8 Overview setting window


2. Select the referenced operation domain from the drop-down menu of "Operation Domain", as the "OA5375" shown in the figure above, Tags in the referenced domain will be shown in the tag list.
3. Select a tag from the tag list and click "OK".

As shown in the figure below, tag 0 belongs to local project, tag 1 belongs to the referenced project. The tag name format of referenced project is "Alias of Referenced Operation Domain. Tag Name".

ID	Description	Name
0	Standby	AI00100010 ?
1		OA5375.AO00020000 ?

Figure 4-9 Tag selection

4.3 Data Viewer Window Configuration

Right-click the operation team “Unit 1” in the VFHMICfg window, and select “Add Data Viewer Window” in the pop-up menu, or select **Operation/Add data viewer window** in the menu bar, or click the icon  in the toolbar, and a data viewer window node named as “Data Viewer 1” by default is added, as shown in Figure 4-10.

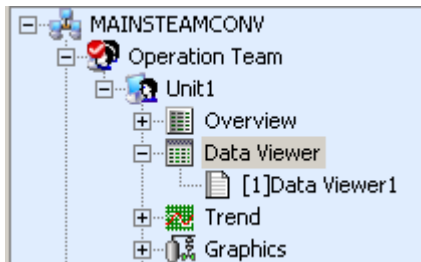



Figure 4-10 Add data viewer window in operation team

Right-click “Data Viewer” in Figure 4-10, and select “Add Page” in the pop-up menu, or select **Operation/Add** in the menu bar, or click the icon  in the toolbar, so that one page of data viewer window is added. Its page number and description can be modified in the list at the right, as shown in the Figure 4-11.

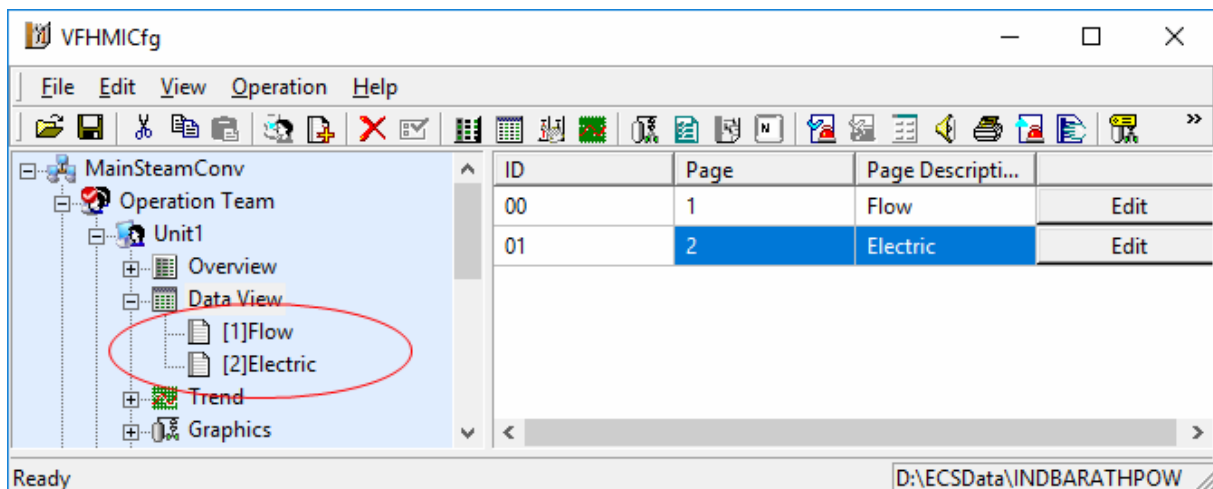


Figure 4-11 Add a data viewer window page

Double-click “Flow” at the left or click the “Edit” button at the right and the pop-up window as shown in Figure 4-12.

Data Viewer Window

Operation Team

Unit1

Page

1

Page Description

Flow

Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?
Content		?	Content		?

OK

Cancel

Figure 4-12 Data viewer window configuration window (1)

Users can also select “Flow” by left-key, and the configuration window that shows data viewer window is presented below.

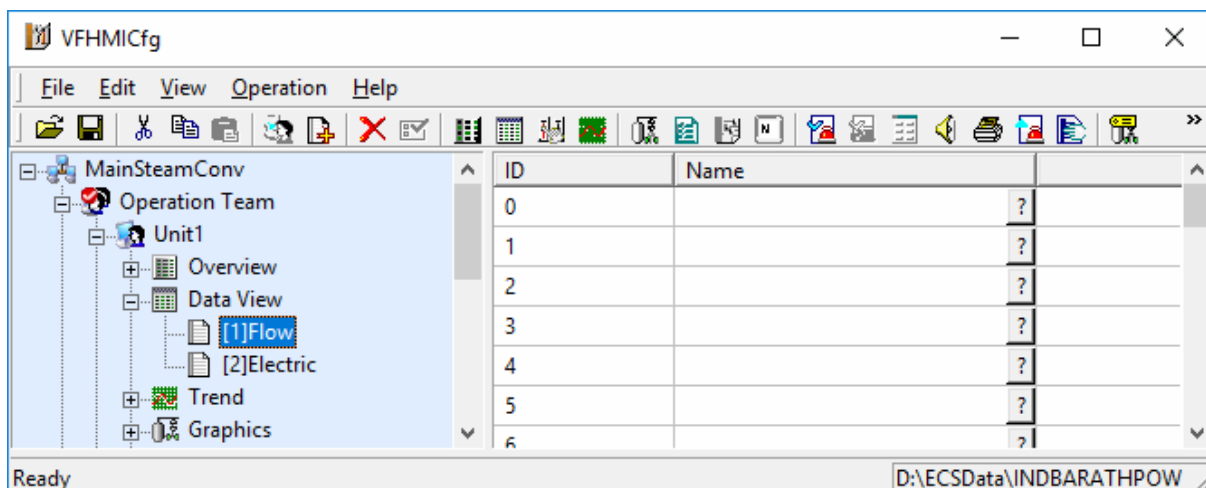




Figure 4-13 Data viewer window configuration window (2)

Data viewer window, as one of the standard system windows, displays the real-time value and description of 32 tags at a time under real-time supervision status.

Click the query button  in Figure 4-12 or Figure 4-13, and the tag selector window will pop-up. Select the needed tags and press the “OK” button to add the tag.

Add Referenced Domain Tag to Data Viewer Window

If the operation domain of operation team references the operation domain of other project, the referenced operation domain can be monitored in data viewer window. Operation steps:

1. Click query button  in Figure 4-12 or Figure 4-13, the pop-up "Tag Selector" window is shown below.
2. Select the referenced operation domain from the drop-down menu of “Operation Domain”, in "Tag Selector", Tags in the referenced domain will be shown in the tag list.
3. Select a tag from the tag list and click “OK”.

As shown in the figure below, tags in left pane belong to local project, tags in right pane belong to the referenced project. The tag name format of referenced project is “Alias of Referenced Operation Domain. Tag Name”.

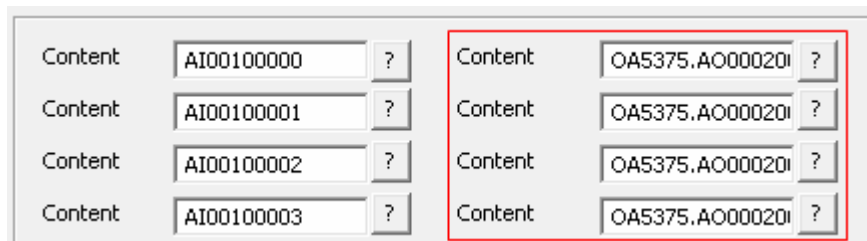



Figure 4-14 Tag selection

4.4 Tuning Group Window Configuration

Right-click “Unit 1” under the operation team in the VFHMICfg window, and select “Add Tuning

Group Window” in the pop-up menu, or select **Operation/Add tuning group window** in the menu bar, or click the icon  in the toolbar, so that a data viewer window named as “Tuning Group 1” by default. The operation is as shown in Figure 4-15.

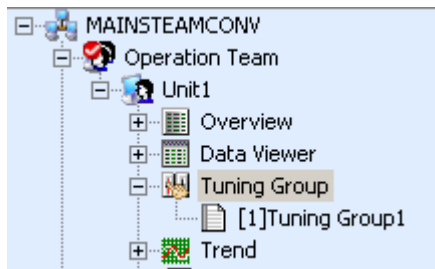



Figure 4-15 Add tuning group window in operation team

Right-click “Tuning Group” in Figure 4-15, and select “Add Page” in the pop-up menu, or select **Operation/Add** in the menu bar, or click the icon  in the toolbar, so that a tuning group window page is added. Its page number and description can be modified in the list at right, as shown in the Figure 4-16.

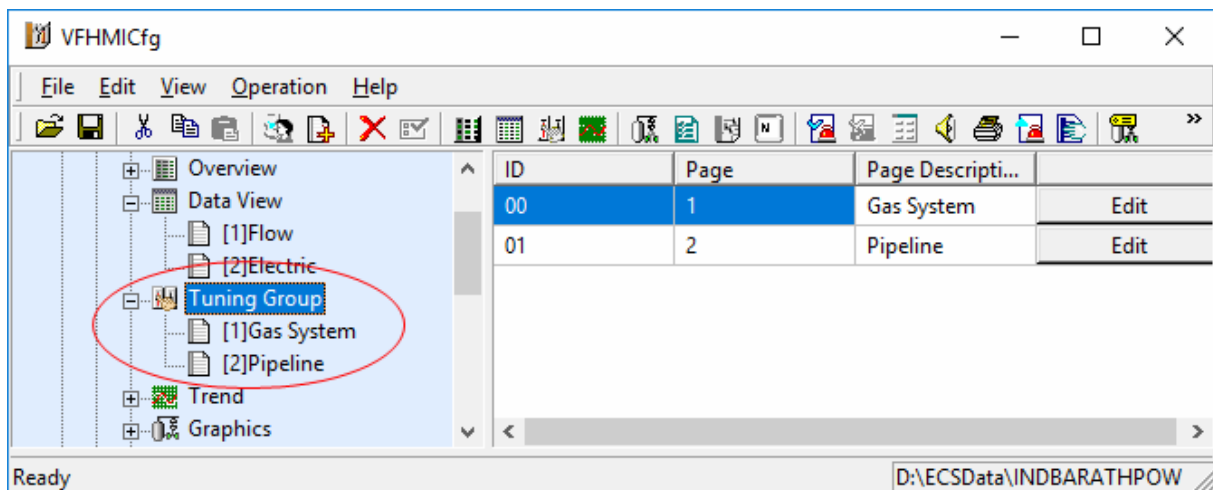


Figure 4-16 Add a tuning group window page

Double-click “Gas System” at left or click the “Edit” button at right and the pop-up window as shown in the Figure 4-17.

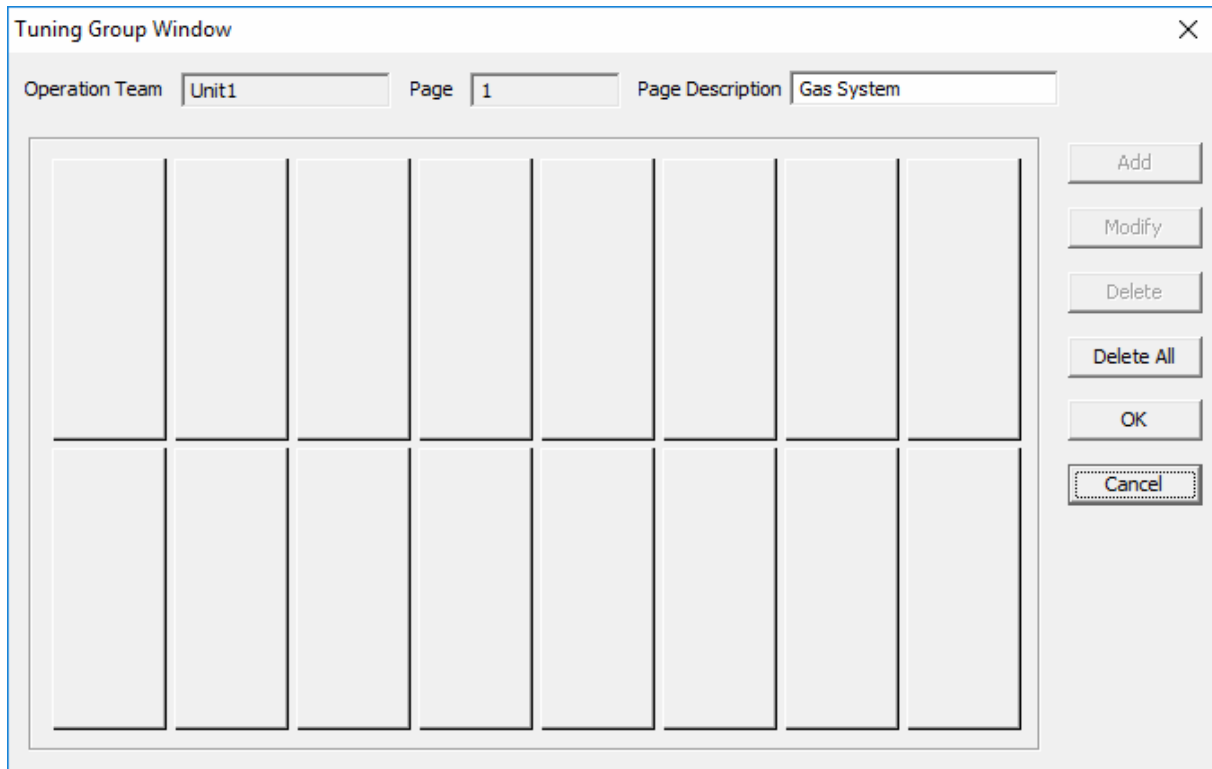


Figure 4-17 Tuning group window setting interface

Select “Gas System” and double-click the information display area at right, and the setting of tuning group window will pop-up, as shown in Figure 4-17

Users can add at most 16 tags in a page of tuning group window. The Add button will be available by clicking the Information Block. Press the “Add” button (or double-click the information block), the tag selector will pop up, from which users can select and add the needed tags (one at a time). Several tags can be added at a time by selecting them all while pressing Ctrl or Shift key. In addition, users can delete the selected tags by pressing “Delete” and “Delete All” button. After setting, press the “OK” button to finish the tuning group window setting operation.

Instrument panel corresponding to tags added in the tuning group window has its “shape”, for example, the corresponding instrument panel shape of I/O tag is “1*1”, which only occupies 1 information block in the tuning group window, while the corresponding instrument panel shape of some tags with complicated functions (e.g. PID function block) is “1*2”, which occupies 2 information blocks.



Figure 4-18 Tag shape in tuning window

Add Referenced Domain Tag to Tuning Group Window

If the operation domain of operation team references the operation domain of other project, the referenced operation domain can be monitored in tuning group window. Operation steps:

- 1) Click an information block in Figure 4-17, and click "Add" (or double-click the information block) to pop up the "Tag Selector".
- 2) Select the referenced operation domain from the drop-down menu of "Operation Domain", in "Tag Selector", Tags in the referenced domain will be shown in the tag list.
- 3) Select a tag from the tag list and click "OK".

As shown in the figure below, tags in red frame belong to the referenced project, tags below belong to the local project. The tag name format of referenced project is "Alias of Referenced Operation Domain. Tag Name".



Figure 4-19 Tuning Group Window

4.5 Trend Window Configuration

This section introduces how to add trend in operation team, and how to add reference domain tag in trend.

4.5.1 Add Trend


Add trend to operation team in VFHMICfg by following steps:

1. Add Trend to Operation Team

When adding operation team, trend window will be added automatically.

Users can add it manually by selecting the operation team, right-clicking the “Unit1”.

Then select “Add Trend Window” in the pop-up right-key menu, or select **Operation/Add**

trend window in the menu bar, or click the icon  in the toolbar to add trend window node.

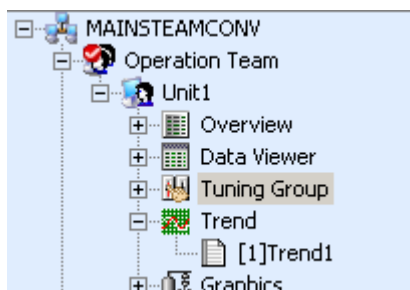



Figure 4-20 Add trend window in the operation team

The node is named as “Trend 1” by default, as shown in the Figure 4-20.

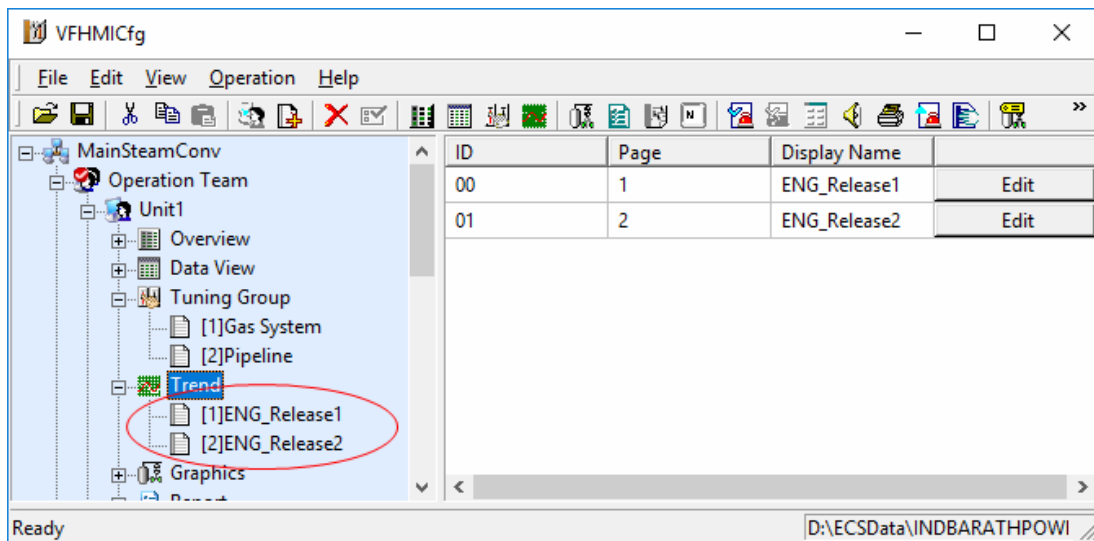
2. Add Trend Page

Right-click “Trend” and select “Add page” in the right-key menu or select **Operation/Add**

in the menu bar, or click the icon  in the toolbar to add a new page trend window.

3. Configure Page Properties

Its page number and name can be modified in the list at the right “Information Display Area” after selecting “Trend Page” in configuration tree, as shown in *Figure 4-21*.

**Figure 4-21 Add one page trend window**

Page number should be positive integer of 0~500, description cannot exceed 64 characters. The page 1 will be shown in default in VFLaunch.

4. Configure Trend

Double-click “ENG_Release1” in the left pane (or click “Edit” button in the right pane then double-click the information display area in right), and trend configuration settings window will pop up, as shown in the Figure 4-22.

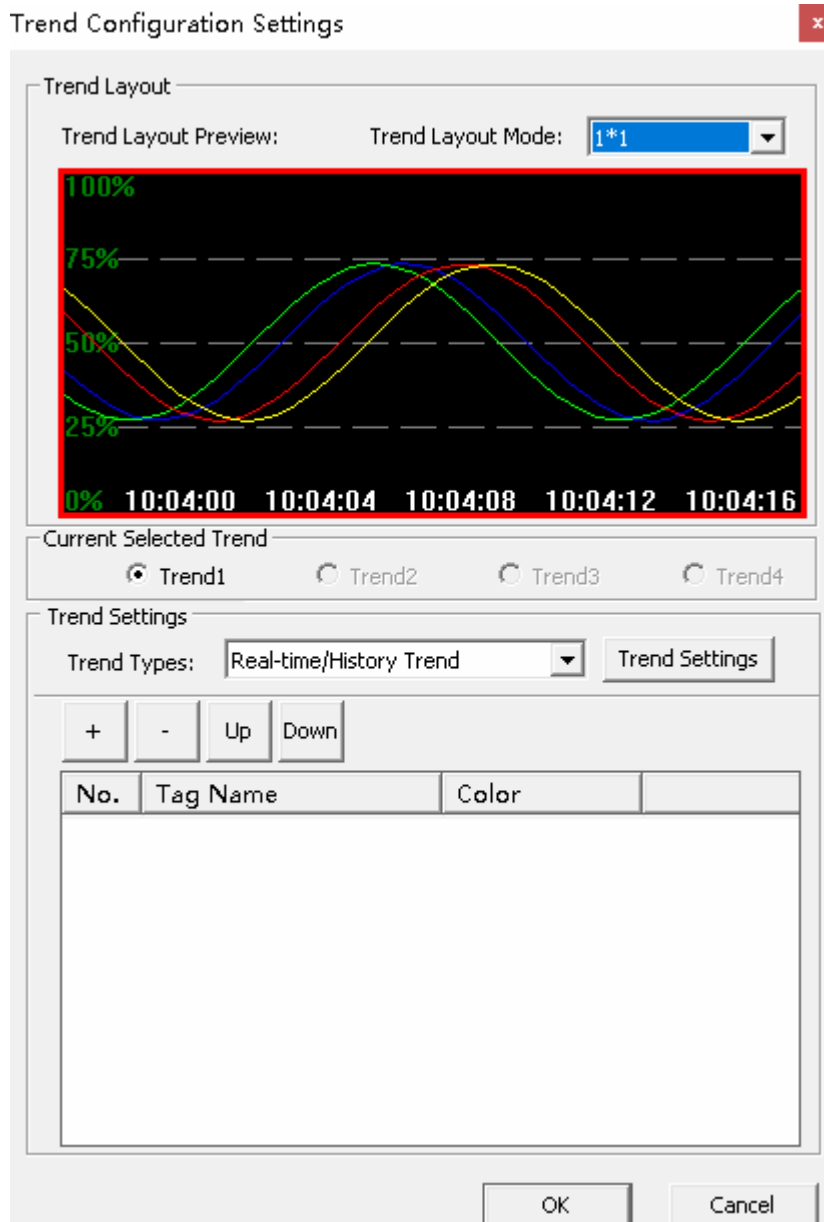


Figure 4-22 Trend configuration settings window

Configure items of trend configuration by table below.

Table 4-1 Setting items of trend configuration

Items	Sub-items	Configuration
Trend Layout		Trend layout modes include 1*1, 1*2, 2*1 and 2*2. The trend window can be viewed when previewing the trend layout. Different layouts will display different trend control layout styles in the trend configuration window in real-time monitoring software.
Current Selected Trend		When the current selected layout mode is not of 1*1, users can select trend 0, trend 1, trend 2 or trend 3 to ensure current trend control.
Trend Types		Temporarily cannot be selected. In supervision, the real-time trend or history trend will appear by pressing the real-time/history switch button.
Trend Setting		Display setting of trend window in supervision. Press "Trend setting" button and the trend setting window will pop up, as shown in the Figure 4-23.
	Save as Default Settings	Click the button after setting the items in trend settings page. Then the settings of trend added will be same as default.

Items	Sub-items	Configuration
	Reset Default Settings	Click the button to keep the current settings. Then the settings of trend added will be reset as default.
	Restore to Default Settings	Click the button to restore the settings of trend as default (current default settings may not the system default value).
Advance	It is used to configure the advanced property of each trend tags, including the maximum and minimum limits of coordinates and desirable area property and .etc.	

4) Click “Trend Settings” button, and the “Trend Settings” dialog box will pop up.

Figure 4-23 Trend settings window

According to the table below to configure the trend page.

Configured Items	Function Description	Configuration Methods
Full Screen	Whether or not the trend page shows in full screen	If ticked, trend page will show in full screen, otherwise show in the current configured size
Display Curve Label	Whether or not to display the number labels in the curves	If ticked, numbers are displayed in curves, otherwise, it isn't displayed
Display Toolbar	Whether or not to show the tool bars in the trend page	If ticked, it is displayed otherwise, it isn't displayed
Display Time Coordinates	Whether or not display time at the bottom of the trend page	If ticked, it is displayed otherwise, it isn't displayed
Display Value Coordinates	Whether or not to display the value coordinate on the leftist of the trend page	If ticked, it is displayed, otherwise it isn't displayed. After being ticked, the display format is configured as “percent” or “project volume” in the drop-down list.
Display Multi Y Axis	Whether or not to display Y coordinate for each tag in the trend page	If ticked, it is displayed otherwise, it isn't displayed

Display BarLine		Whether or not display slider in the trend page	If ticked, it is displayed otherwise, it isn't displayed
Display Grid		Whether or not display grid in the trend page	If ticked, it is displayed otherwise, it isn't displayed. After being ticked, it has multiple options and can be configured in the drop-down list.
Font Color		The text color used to configure tag information and time	Click color box and select colors.
Background Color		It is used to configure the background of the trend page	Click color box and select colors.
Display Tag Information	Display Position	It is used to appoint the display method and location of the tag information and display method	By default,, if the "display location" is "list", it includes tag name, the value of the point of the intersection, the upper and lower limit and statistics information. When "display location" is not "list", the display information of tags only includes tag top, tag bottom and medium part of tags. When "display location" is not "list", the display content only includes tag name, description, the current value and the upper and the lower limits.
	Tags in Each Row	It is used to appoint the number of displaying tag each row	When the display location is "top", "bottom" and "medium", it can appoint the tag number each row displays.
	Information in Each Row	It is used to appoint the number of displaying information each row	When the display location is "top", "bottom" and "medium", it can appoint the tag information number each row displays. Tag information includes tag name, description and measuring range. Whether to display can be configured by the following configuration.
	Display Tag Name	It is used to appoint whether or not to display the tag name	If ticked, the tag name is displayed in the tag information. Otherwise, it isn't.
	Display Tag Description	It is used to appoint whether or not to display the tag information	If ticked, the tag description is displayed in the tag information. Otherwise, it isn't.
	Display Tag Value	It is used to appoint whether or not to display the tag value	Cannot configure
	Display Range	It is used to appoint whether or not to display the tag measuring range	If ticked, the tag measuring range is displayed in the tag information. Otherwise, it isn't.
Trend Time Span		It is used to appoint the time range of the trend page	Input in the text box
Recent History Setting		It is used to specify the display method of the statistics of history value range	The drop-down list displays the time width of the width of the history statistics.
Restore Configuration Settings		It is used to restore the setting of the trend control to the default initial state.	Click it to restore the configuration.




Tip:

- Right-click "Trend" in configuration tree and select "Batch Settings" to pop up the "Trend Settings" in Figure 4-23. User can set all trends via batch settings.

- In default state, according to the method of the trend layout, a maximum of 32 trend tag can be displayed on each trend window page (2*2 layout, a maximum of 8 trend tags can be displayed on each trend window page). If you need to modify the maximum of each trend window page, please refer to "Configure Maximum Number of Tags".

5. Add Tag to Trend

Click the icon  after tags, and choose trend tag (including field) in the "Tag Selector" dialog below, and then click "OK" to finish adding the tag.

The figure below is a trend monitoring window example setting "Layout" as "2*1", "Trend 0" as "Show Multi-Y Axis", other settings are in default.

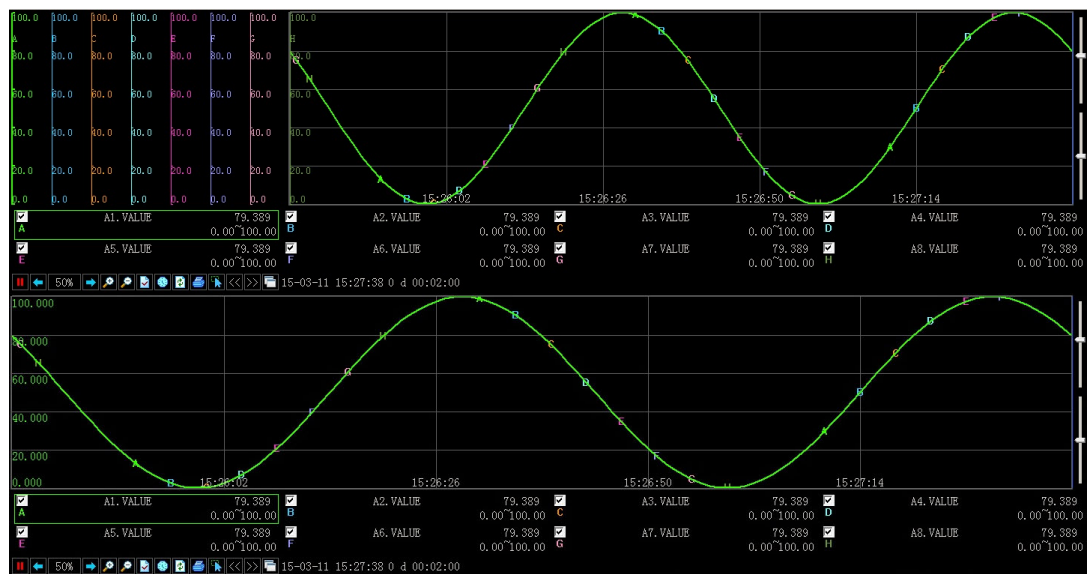
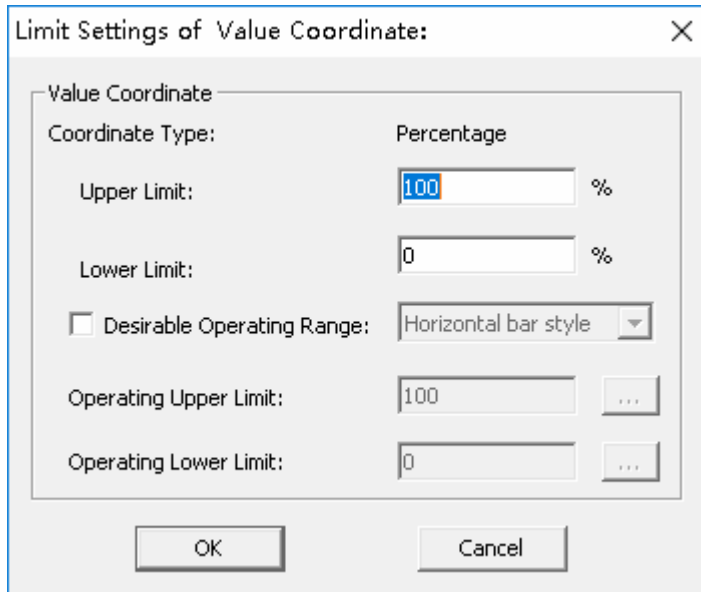


Figure 4-24 Trend monitoring window in monitoring

6. Configure the advanced property of trend tags

After adding tags, click "Option" and the dialog box below will pop up in which you can configure the advanced property of the trend tags including the maximum and minimum limits of coordinates and desirable area property.




The dialog box is titled "Limit Settings of Value Coordinate:". It contains the following fields and controls:

- Value Coordinate** (Section Header)
- Coordinate Type:** Set to "Percentage".
- Upper Limit:** Input field with "100" and a "%" suffix.
- Lower Limit:** Input field with "0" and a "%" suffix.
- Desirable Operating Range:** A checkbox that is unchecked, followed by a dropdown menu currently showing "Horizontal bar style".
- Operating Upper Limit:** Input field with "100" and a button with three dots "..." to its right.
- Operating Lower Limit:** Input field with "0" and a button with three dots "..." to its right.
- Buttons:** "OK" and "Cancel" at the bottom.

Figure 4-25 Advanced property dialog box of trend tags

According to the table below, you can configure the maximum and minimum limits of the coordinates of tags in the trend control.

Table 4-2 Tag coordinates and desirable area property description

Configuration Items	Description
Upper Limit/ Lower Limit	They are used to assign the maximum and minimum limits of the trend of one tag, for example, if you configure the maximum limit as 80%, the minimum limit as 10%, then the trend curve of the tag will be displayed between 10% and 80% of the trend screen.
Desirable Operating Range	They are used to configure whether or not to display the desirable area of the tag and the display style. If checked, it will be displayed, otherwise, it will not. After the desirable area is displayed, you need to select the display style of the selected desirable area in the drop-down menu, Desirable line: it will be displayed according to the tag trend color and the upper and lower limits in the trend screen as shown in the figure below. Bar graph: it will be displayed according to the tag trend color and the upper and lower limits in the trend screen as shown in figure below.
Operating Upper Limit/ Operating Lower Limit	They are used to assign the desirable maximum and minimum limits of the trend curve of the tag. This configuration supports values and tags: Values: input in the text box. Tags: click  and select tags in the pop-up "Tag selector". It is noted that if the tag name is number, it should be written as tag ("tag name.field"), such as Tag ("123.pv").

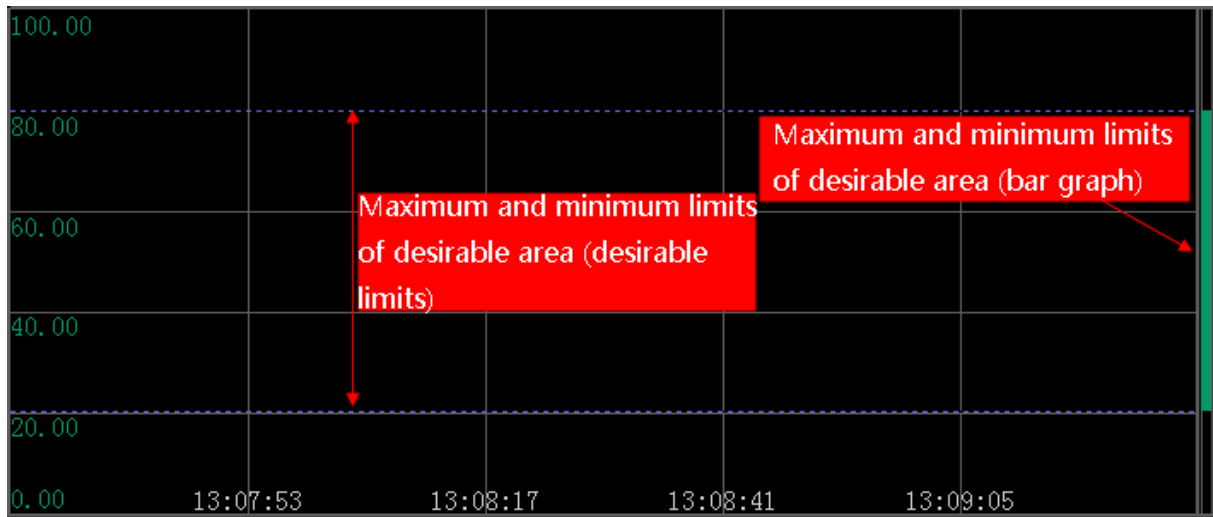



Figure 4-26 Desirable area example of trend screens

4.5.2 Add Referenced Domain Tag

If the operation domain of operation team references the operation domain of other project, the referenced operation domain can be monitored in trend window. Operation steps:

1. Click  in Figure 4-22, to pop up the “Tag Selector” below.

Tag Selector [X]

Filter

Operation Domain: **OA5375 - Operation Dor** Tag Name Filter:

Control Domain: **All Visible Control Domain** Tag Desc Filter:

Control Station: **All Visible Control Station** ☒ Trend Tag ☒ Non-trend Tag

Tag Group: **All Tag Group** ☐ Case Sensitive >>

System Type: **All Types**

Tag Type: **All Types**

FunctionBlock Type: **All Types**

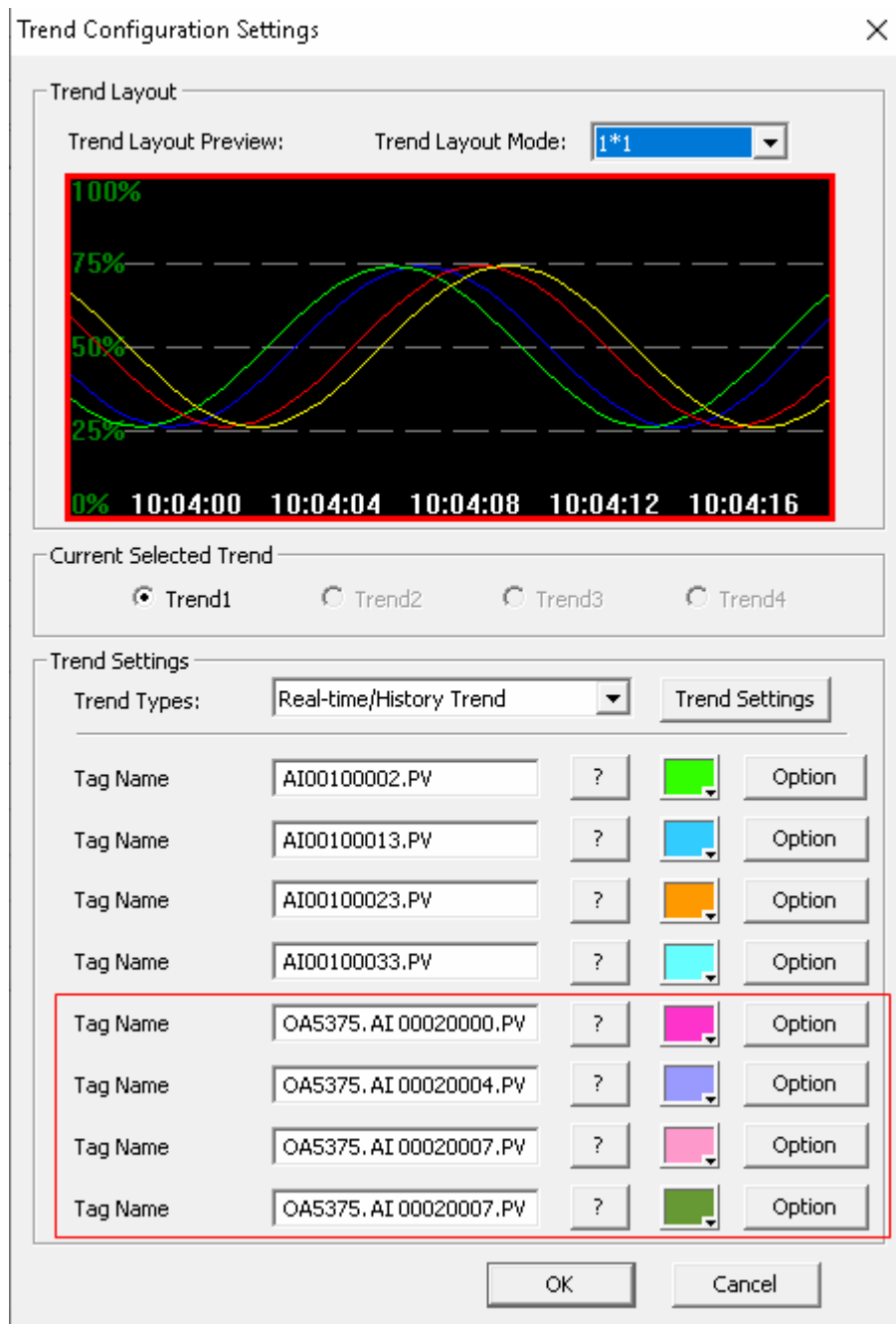
Tag Name	Tag Description	Tag Type	Field	Field Description
NA00020000	Standby	Custom Analog	REVSCL	Run Fault
NA00020001	Standby	Custom Analog	HHSUP	HH Alarm Suppress
PHASE1		Function Block	HH_B	HH Limit Alarm
AI00020000	Standby	Analog Input	LLPRI	LL Alarm Priority
AI00020001	Standby	Analog Input	LPRI	L Alarm Priority
AI00020002	Standby	Analog Input	LLL_B	LLL Limit Alarm
AI00020003	Standby	Analog Input	LL_B	LL Limit Alarm
AI00020004	Standby	Analog Input	ACTAPRI_	Highest Priority of
AI00020005	Standby	Analog Input	DPVSUP	DPV Alarm Suppres
AI00020006	Standby	Analog Input	SUP	Tag Alarm Suppres
AI00020007	Standby	Analog Input	HHHSUP	HHH Alarm Suppres:
			LLLSUP	LLL Alarm Suppres:
			HPRI	H Alarm Priority
			ERRPRI	ERR Alarm Priority
		

Tag Number: 11

Figure 4-27 Tag selector

2. Select the referenced operation domain from the drop-down menu of "Operation Domain", as the "OA5375" shown in the figure above, Tags in the referenced domain will be shown in the tag list. The segment shown after selecting the tag is multicast parameter.
3. Select a tag from the tag list and click "OK".

In trend window page, the tag name of referenced project is "Alias of Referenced Operation Domain.Tag Name.Fields", such as "OA5984.AO100.SUP".

**Tips:**

“ACTAPRI_” field of referenced domain tags should not be configured in trend.

4.5.3 Configure Maximum Number of Tags

In default state, custom trend in a trend window, trend control and real-time monitoring supports up to 8 tags.

If you need to add more than 8 tags in actual trend window, create and modify the relational files

under the project path according to following steps. In default state, project path is "D:\SUPCON_PROJECT\project name".

1. Create and configure Trend.ini file

Create Trend .ini file under the project path, and add the following lines of code.

[chart]

TrendLineCount=n

n is an integer between 8 and 64, n= maximum number of tags supported by trend window.

2. Add file to .file file under the project path

Open the .file file under the project path, and add a line with content of "Trend.ini".

3. Refresh

Close VFHMICfg and refresh the configuration in VFExplorer to ensure that the modification takes effect.



Tips:

After the configuration files is published, the maximum number of tags in custom trend in trend window, trend control and real-time monitoring changes at the same time.

4.5.4 Configure Tag list in Trend

In default state, when tag information in the trend window is displayed as a list, the tag information on the list includes tag name, join value 1/2, unit, description, etc.

If the contents and order displayed on the list are different from the default, the trend configuration file in the project file can be modified according to the following steps.

1. Create and configure Trend.ini file

Create Trend.ini file under the project path

In default state, project path is "D:\SUPCON_PROJECT\project name".

2. Configure content displayed and order

Add TagInfo node in the configuration file, and input the information and order to be displayed. The format is:

[TagInfo]

Item displayed= display order

- ❑ Item displayed can be configured as "Name", "JoinValueOne", "JoinValueTwo", "Description", "Unit", "UpLimit", "LowLimit", "Average", "UpBaseLimit", "LowBaseLimit", "RealValue". They correspond to "tag name", "join value1", "join value 2", "description", "unit", "high limit", "low limit", "average of current page", "coordinate high limit", "coordinate low limit", and "real-time data" respectively.

- ❑ It is an integer in the range of 1 to 11.

3. Add file to .file file under the project path

Open the .file file under the project path, and add a line with content of "Trend.ini".

4. Refresh

After modifying and saving, refresh configuration in VFExplorer, and offline publish.



Tip:

After this configuration, the tag information in trend window, free trend, single point trend, trend control in graphics and trend control in panel will be displayed according to the configuration file.

4.5.5 Specify Width of Trend Line

High-performanceHMI supports configuring the width of normal trend line and selected trend line in trend window, trend control and pop-up trend, to quickly identify the selected trend line in trend.

1. Create and configure Trend.ini file

The width of trend line is set by configuring Trend.ini file.

In the default state, Trend.ini file does not exist, and you need to manually create Trend.ini file as shown in the figure below and save it under the project path. The default project path is "D:\SUPCON_PROJECT\projectname", projectname is the project name.

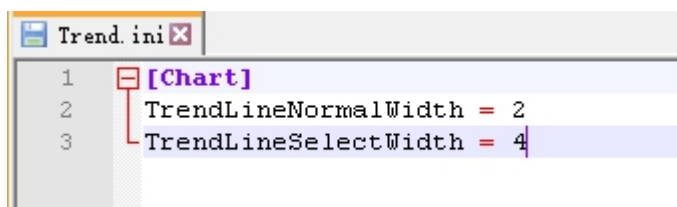



Figure 4-28 Example of Trend.ini file

2. Apply the configuration file Trend.ini

After modifying the configuration file and saving, you need to publish offline the configuration to make all the operation stations display the trend line according to the configuration file.

4.6 Graphics Configuration

4.6.1 Add Graphics to Operation Team

When adding the operation team, graphics will be added automatically. If the graphics needs to be added manually, users can right-click operation team “Unit 1” in the interface of Supervision Configuration Software, and select “Add Graphics” in the pop-up right-click menu. Another way is to select **Operation/Add Graphics** in the menu bar or click  in toolbar. Then a graphics node will be added, meanwhile “Graphics 1” will be generated by default. The interface after adding is shown in Figure 4-28. Maximum 1000 graphics can be added to operation team.

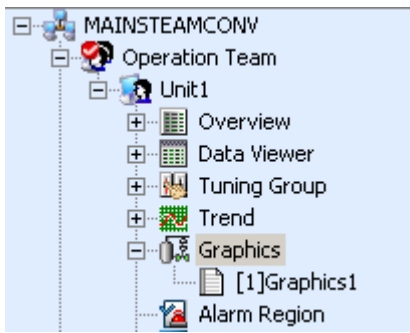


Figure 4-28 Add graphics in the operation team

4.6.2 Add Custom Group

Right-click “Graphics” and select “New Group” to add custom group, as shown below.

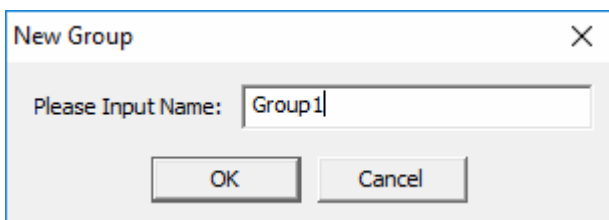


Figure 4-29 Add group

Right-click the custom group and select “Change Group Name” to rename the group.

Right-click the custom group and select “New” to add new group. Names of sub-groups in the same group cannot be repeated or empty. Groups can extend to maximum 5 layers.

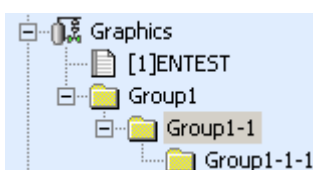



Figure 4-30 Group layers of graphics

4.6.3 Add Graphics Page

Right-click “Graphics” and select “Add Page” in the right-key menu, or select **Operation/Add** in the menu bar, or click the icon  in the toolbar to add one page graphics window. Its page number and description can be modified in the list at the right, as shown in the Figure 4-31.

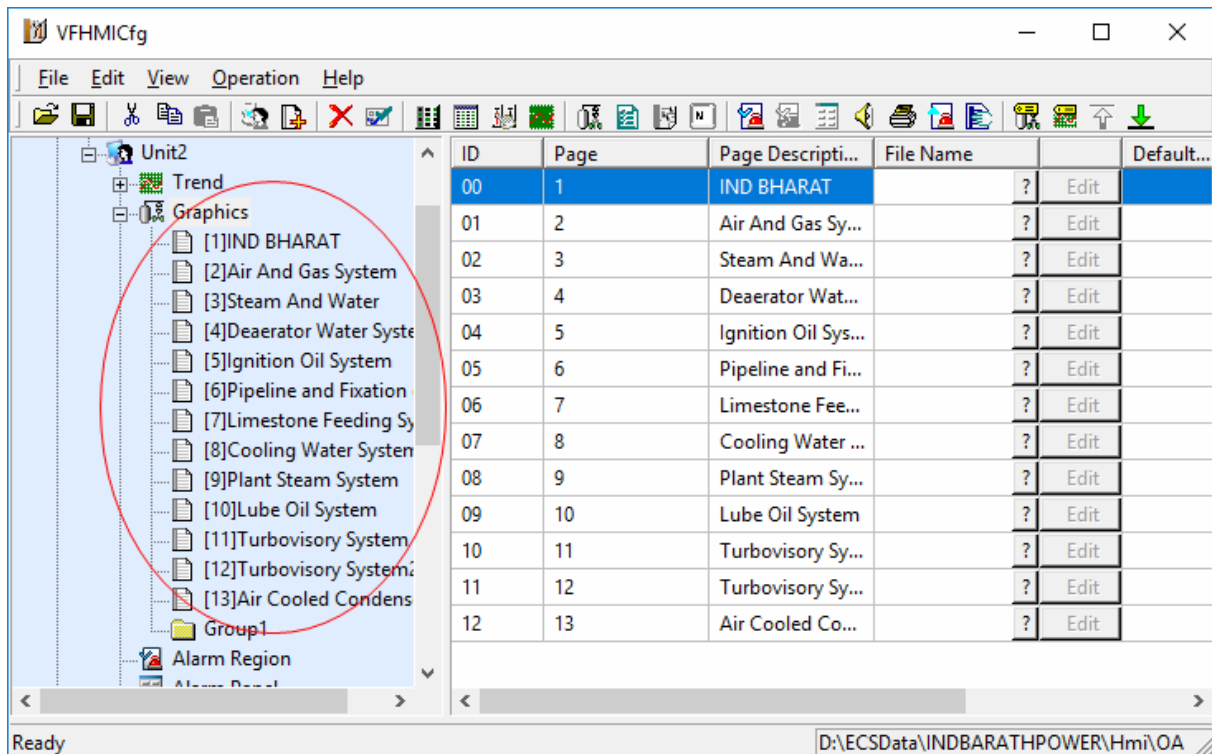


Figure 4-31 Add a graphics page

The contents in “Referenced Domain Alias” are shown as below:

- For graphics of local project, this column is empty.
- For graphics of referenced domain, it shows the domain alias.



Tip:

Graphics of the referenced domain can only be open as read-only, but cannot be edited.

Input a file name (such as IND BHARAT) in “File Name”, and the “Edit” button will be available. Double-click the “IND BHARAT” in the system tree or click the “Edit” button at the right, and the graphics edit window will pop up, as shown in the Figure 4-32.

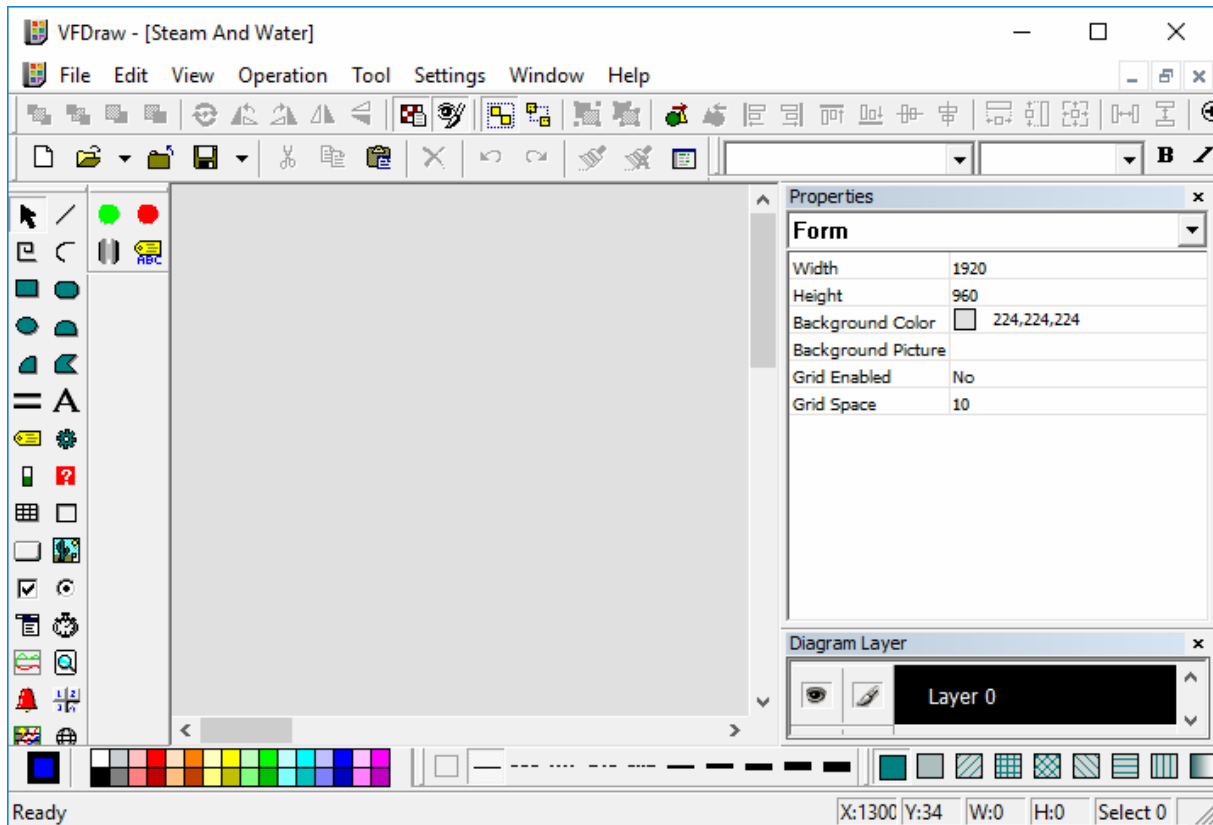



Figure 4-32 Graphics edit window

Users can edit graphics in this edit window.



Tip:

1. When graphics is named as “index.pic”, index.pic graphics will be displayed on the first page of the real-time software.
2. Details for graphics refer to *Graphics Builder User Manual*.
3. “ACTAPRI_” field of referenced domain tags should not be configured in graphics.

If there is existing graphics file in the configuration, users can select the graphics in the dialog box as shown in Figure 4-33 by clicking the icon . Click “Edit” to edit the selected graphics file.

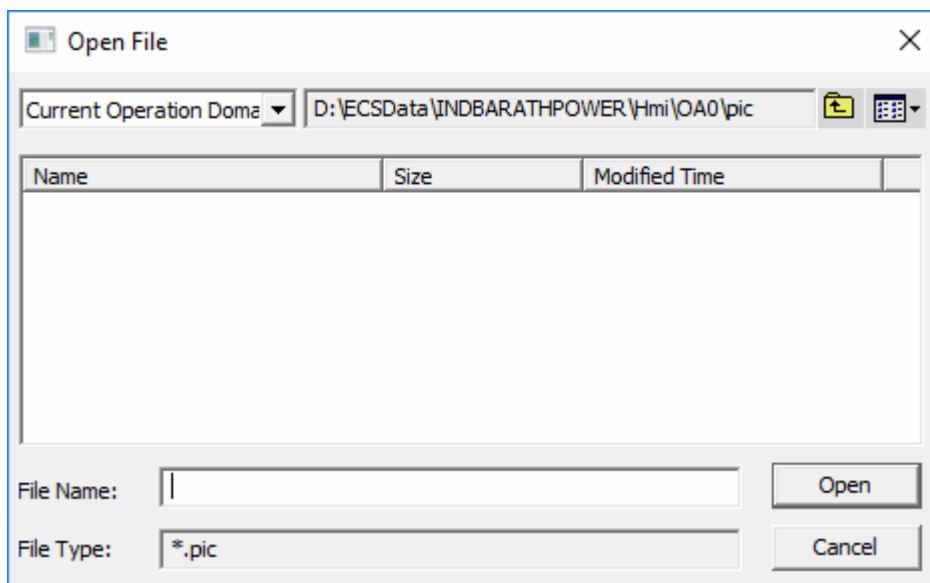



Figure 4-33 Graphics file selection dialog



Tips:

- Select existing graphics by clicking the icon . When the graphics is selected, page description will be changed as the file name of graphics.
- It is not allowed to add two graphics files with the same name in one operation team.

After adding all the graphics, users can choose to login to the default page in supervision window (The first window displayed by default after supervision login. If there is no default graphics page, system home page will be displayed.). Choose the expected default graphics, and select **Operation/Set/Cancel Default Page**, the selected default graphics will display a blue hook in the column "Default Page".

ID	Page	Page Descripti...	File Name			Default...
00	1	IND BHARAT		?	Edit	✓
01	2	Air And Gas Sy...		?	Edit	
02	3	Steam And Wa...	Steam And ...	?	Edit	
03	4	Deaerator Wat...		?	Edit	
04	5	Ignition Oil Sys...		?	Edit	
05	6	Pipeline and Fi...		?	Edit	

Figure 4-34 Default Page Setting

4.6.4 Resource Reference

Right-click the graphics or its sub-file and select "Resource Reference" to pop the figure below, in which user can select folder and file to operation team.

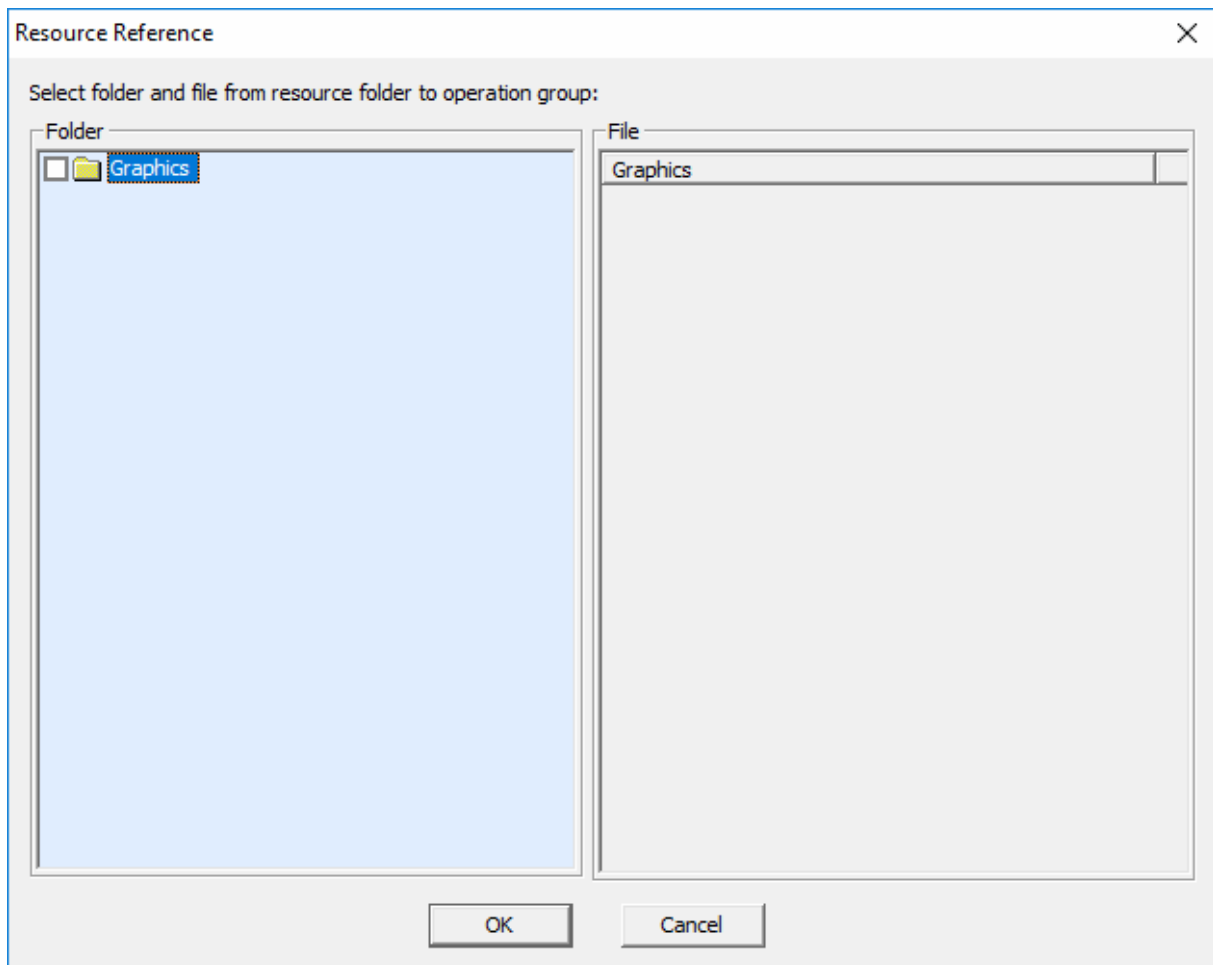


Figure 4-35 Resource Reference

User can reference folder and its files in the resource reference window. Select a folder will select all its files, which will be referenced to the selected group, and the structure is same with that in graphics tree structure.

4.6.5 Inter-domain Reference

The Inter-domain reference can be achieved when the operation domain associated by operation team meets following conditions:

- The project references other project and the operation domain adds the reference domain.
- Reference domain configures the graphics page.

User can achieve Inter-domain reference graphics by steps below:

1. Right-click the graphics or its sub-folder, and select "Inter-domain Reference" to pop up the interface below.

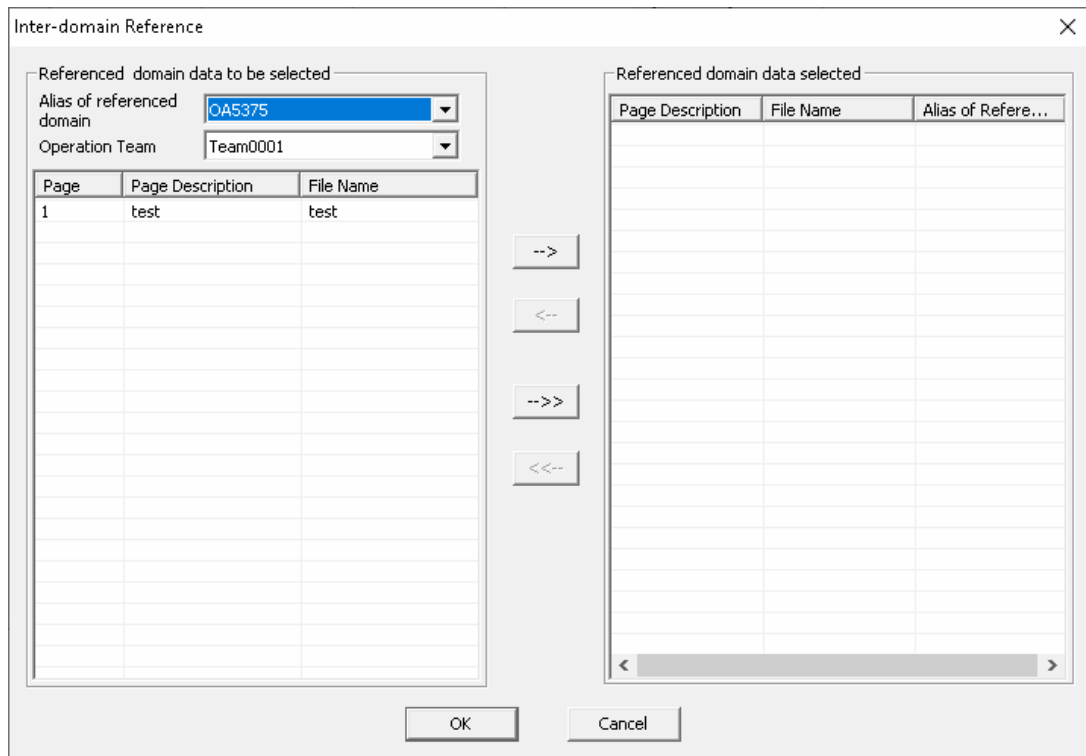


Figure 4-36 Inter-domain Reference

2. Select the domain of referenced graphics and operation team in “Referenced Domain Alias” and “Operation Team”.

After setting conditions, matching graphics will be shown in the list below.

3. Select the graphics, and reference it or all graphics by clicking **-->** or **-->>**.
4. Click “OK” to save the current configuration.

4.6.6 Import/Export Graphics Configuration

Graphics configuration is supported to be imported or exported as CSV file. Importing modified CSV export file to software can reduce the configure workload.

Export Graphics Configuration

Graphics configuration can be exported as CSV file by following steps.

5. Select “graphics” in configuration tree, and select “export” in the right-key menu.
6. Select path in the "Save As" dialog, input a filename. The default import file name of CSV file in graphics configuration is “Graphics.csv”.
7. Click "Save" to complete the export of graphics configuration.

CSV file examples which export from graphics are shown below.

Graph				
Group Name	Page No	Page Name	File Name	Ref OAName
	1	test	test	
	2	test2	test2	
test\	1	gl-test	gl-test	

Figure 4-37 CSV export sample graph of graphics configuration

CSV export file of graphics configuration mainly includes information as below from the above:


- Export file identification of graphics is “Graph”.
- Name of custom group of graphics is “Group Name”.
- Page number and page name of graphics are “Page No” and “Page Name”.
- Pic file name of graphics is “File Name”.

Import Graphics Configuration

CSV export file of graphics configuration can be import to software as below.

8. Choose “graphics” in the configuration tree, and select “import” in the pop-up menu.
9. Pop up import prompt “whether replace the current configuration”, select “Yes”.
10. Select import file in the “open” dialog, select “open”.
11. Pop up prompt “imported successfully”.

4.7 Add Report

Right-click “Unit 1” under operation team in VFHMICfg window, and select “Add Report” in the pop-up menu, or select **Operation/ Add Report** in the menu bar, or click the icon  in the toolbar, and the report mode selection dialog as shown below will pop up.

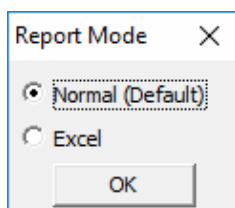


Figure 4-38 Select Report Mode

Choose either of them and click “OK”. “Report 1” is created by default, as shown in the Figure 4-39.

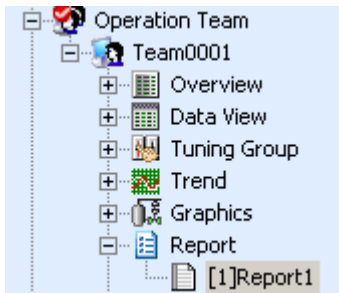



Figure 4-39 Add report successfully in operation team

Right-click “Report”, and select “Add pages” in the right-key menu, or select **Operation/Add** in the menu bar, or click the icon  in the toolbar to add a report window page. Its page number and description can be modified in the list at the right, as shown in the Figure 4-40.

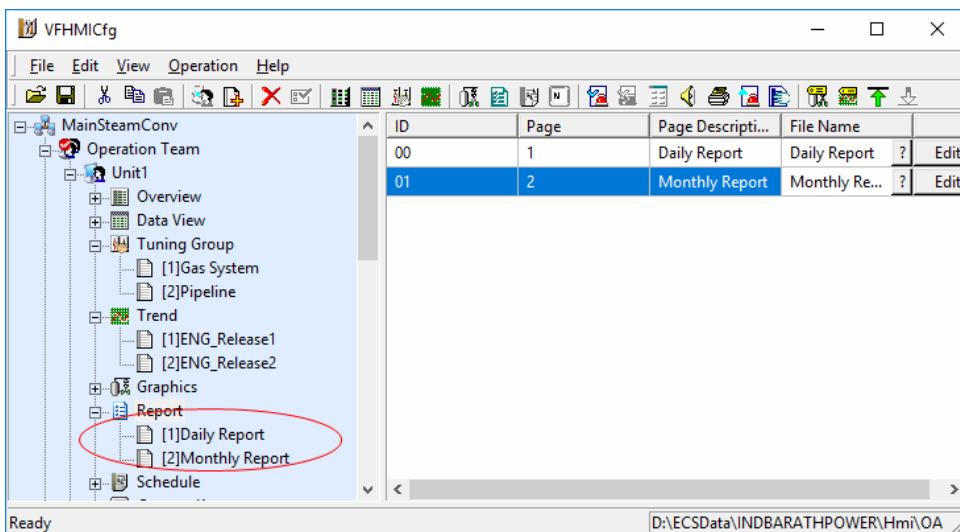


Figure 4-40 Add report page

Input report name (such as Daily Report) in the “File Name”, and the edit button will be available. Double-click “Daily Report” in the system tree or the “Edit” button at the right and the report configuration window will pop up. Figure 4-41 shows the configuration page of Excel report.

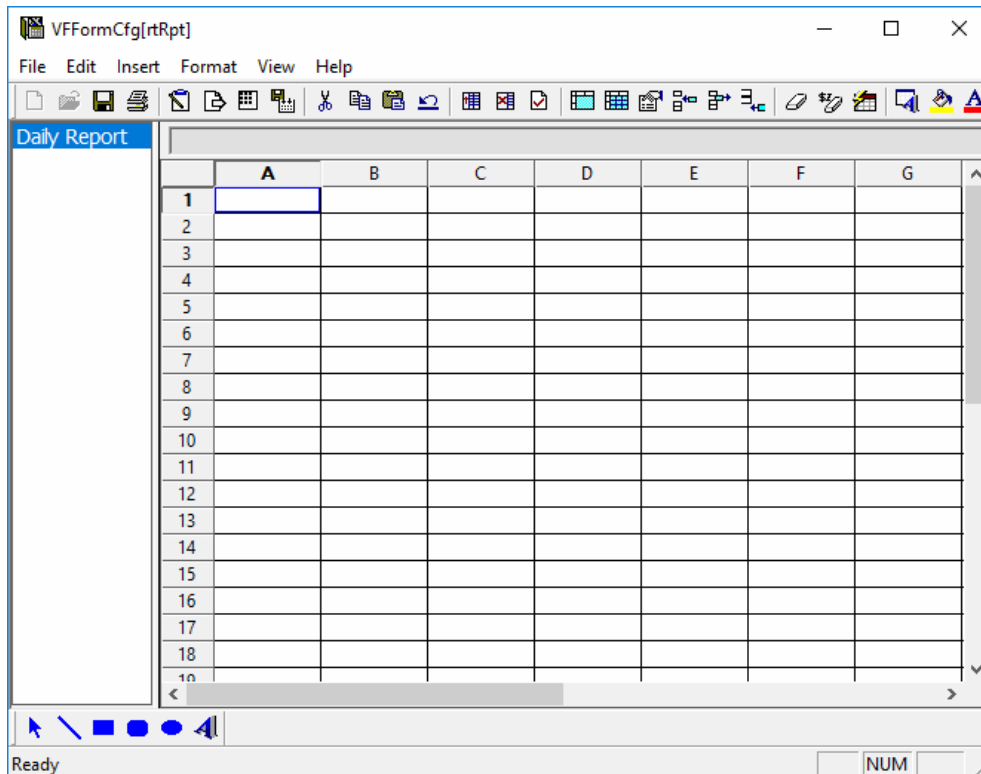



Figure 4-41 Report edit window (Install Microsoft Office Excel 2003)

When report file already exists in the configuration, users can select the existing reports in the pop-up dialog by clicking the icon . Click “Edit” to edit the selected report file.

When the report is selected, page description will be changed into as report file name.




Tips:

1. If report is not added in any operation team (including the situation that added before and then deleted), the report mode select dialog will pop up when adding report to the operation team, user can select to add “Normal” or “Excel” report.
2. Before making Excel report, users need to install Microsoft Office Excel (The version of Microsoft Office Excel 2013 is recommended, which is compatible to Microsoft Office Excel 2010, Microsoft Office Excel 2003 and Microsoft Office Excel 2000/2007) and uninstall software like WPS.
3. Please refer to *Report Software User Manual* for details about report configuration.

4.8 Add Inter-domain Alarm

If current operation domain has reference domain, user can manage the alarms of its tags. Steps are shown below:

- Right-click an operation team from the structure tree and select “Add Referenced Domain Alarm”, to add a node of Inter-domain alarm in structure tree, the icon is  Referenced Domain Alarm Settings.
- Double-click “Inter-domain Settings” and the interface pops up shown in Figure 4-42.

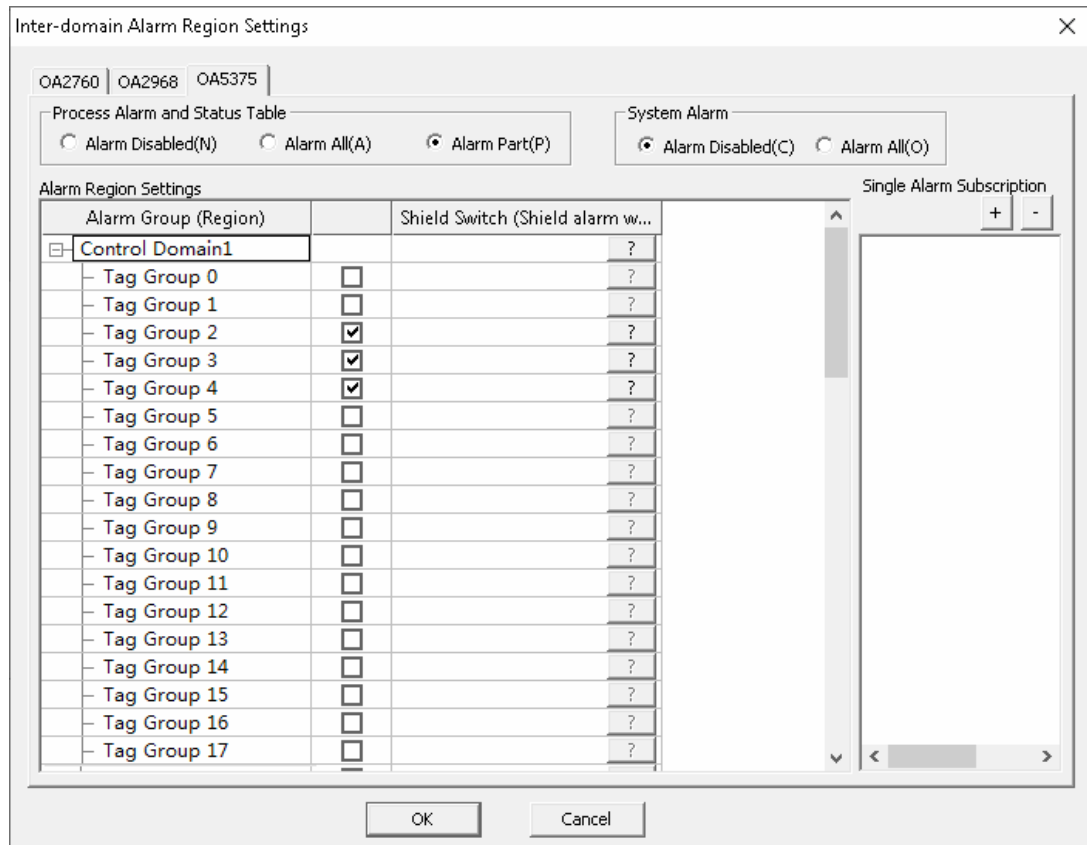


Figure 4-42 Region settings of Inter-domain alarm

- Set the Inter-domain alarm region as required in “Inter-domain Settings”.
- Select “Disable Alarm” to disable all Inter-domain alarms.
- Select “All Alarm” to enable all Inter-domain alarms.
- Select “Part Alarm” to enable the “Alarm Enabled Region Settings” part, and set the alarm enabled region of Inter-domain as required, i.e. select the box of alarm region to be enabled.

If select “Part Alarm”, the tag can be selected for re-subscription.

- Click “+” and the tag selector pops up.
- After selecting the tag to be subscribed, go back to the “Inter-domain Alarm Region Settings” interface.



Tip:

Inter-domain alarm settings including alarm enabled region settings and subscription tag settings, i.e. they are in relation of or.

As shown in the figure below, the alarm settings for tag in the referenced domain OA5375 are:

- Enable tag alarms in No.2 and No.3 alarm regions.
- Enable alarm of tag OA5375.DI00020005.
- Enable alarm of tag OA5375.AI00020002.
- Enable alarm of tag OA5375.AI00020008.

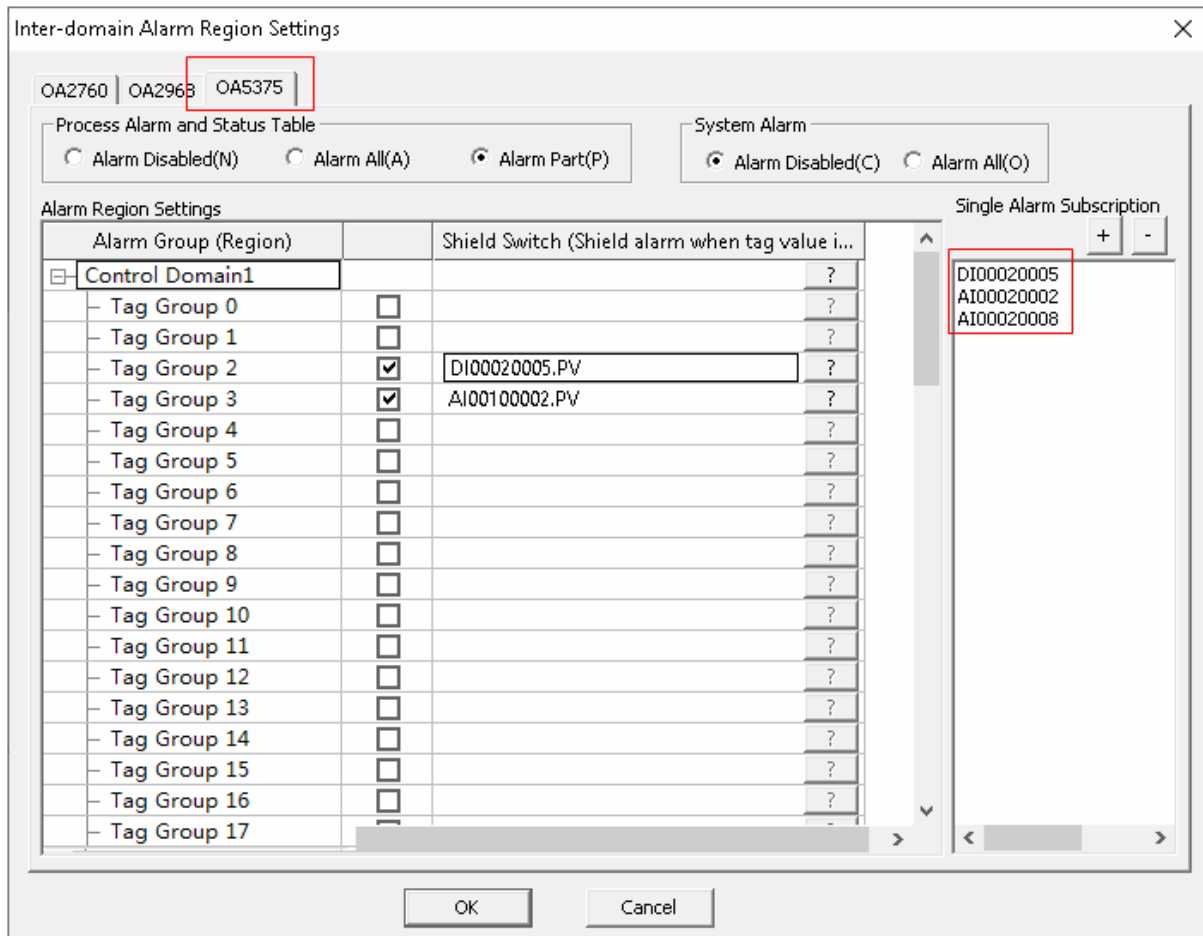


Figure 4-43 Alarm settings of reference domain

4.9 Schedule Configuration


Schedule, as a component of High-performanceHMI configuration software package, is used to ensure that the system can plan and set special operation tasks and execute the tasks in time and with efficiency according to the rules.

The control rules set by schedule function block refer to the trigger conditions that control task running, including time trigger and event trigger. Operation tasks refer to fixed operation content of schedule function block, including run scripts, pop-up windows and evaluation of the tag parameters, etc.

The realization of schedule requires users firstly to set schedule conditions and confirm operation tasks, and then to start up schedule service program in the running environment of Visual Field system. The system will trigger schedule tasks when the conditions are met via real-time detecting.

The schedule interface is clear and concise, so that users can edit time tasks and event tasks in time schedule report and event schedule report respectively. The edit operation of schedule is also quite easy, making the execution of expected actions under given trigger condition accurate and prompt.

An operation team can configure at most 10 schedule files in configuration. Each schedule file can set 50 time schedule operations and 50 event schedule operations.

Right-click “Unit1” under Operation Team in the supervision configuration interface, and select “Add Schedule” in the pop-up menu, or select **Operation/Add schedule** in the menu bar, or click the icon  in the toolbar to add a schedule named as “Schedule 1” by default as shown in the figure below.

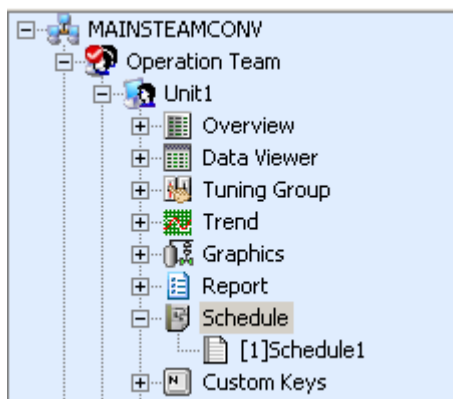



Figure 4-44 Add Schedule in Operation Team

Right-click “Schedule” in the above figure, and select “Add Page” in the right-key menu, or select **Operation/Add** in the menu bar, or click the icon  in the toolbar to add a schedule window page. Its page number and description can be modified in the list at the right, as shown in the Figure 4-45.

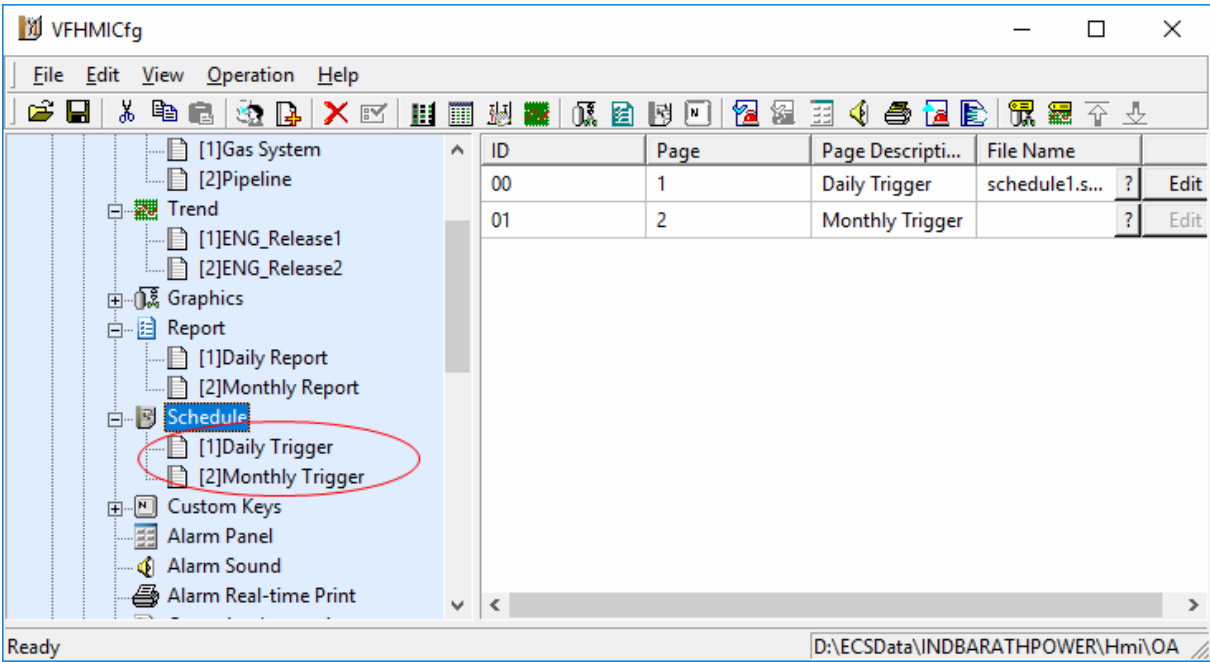


Figure 4-45 Add schedule page

Input a file name (such as Daily Trigger) in the “File Name”, and the edit button is available. Double-click the “Daily Trigger” in the system tree or the “Edit” button at right, and the schedule configuration window will pop up, as shown in the Figure 4-46.

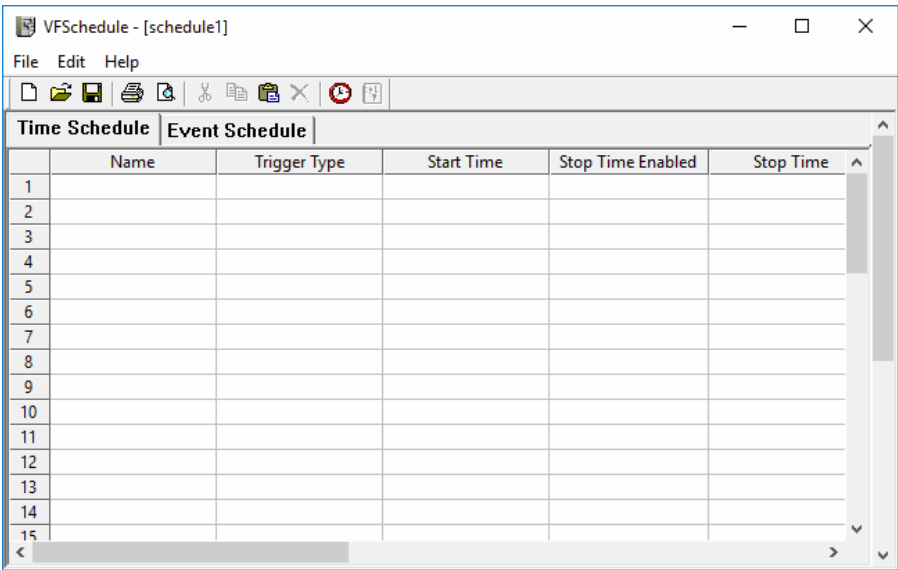



Figure 4-46 Schedule configuration software window

When report file already exists in the configuration, users can select existing schedule files in the pop-up dialog by clicking the icon .



Tip:

Users can select existing schedule files by clicking the icon . When the schedule file is selected, page description will be changed into as the schedule file name.

Schedule settings include time schedule and event schedule, as shown in Figure 4-46. Time schedule is used to set time tasks based on time trigger actions; event schedule is used to set event tasks based on event trigger actions.










4.9.1 Schedule Configuration Interface


As shown in Figure 4-46, Schedule Configuration Interface consists of Title Bar, Menu Bar, Toolbar, Configuration Task Record Area, etc.

- Title Bar: Displays the editing file name.
- Menu Bar: Includes options of File, Edit and Help. Each menu option has a submenu.
- Toolbar: Lists out some common menu commands by tool icon separately, making it convenient for users. It includes New, Open, Save, Print, Print Preview, Cut, Copy, Paste, Delete, Add Timer Schedule Operation (edit time schedule), Add Event Schedule Operation (edit event schedule), etc.
- Configuration Task Record Area: Displayed in the middle area of the window, which records time schedule task or event schedule task. Each configuration task is displayed in record forms in Configuration Task Record Area.

4.9.2 Menu/Toolbar Command


Table 4-3 Commands in menu bar/ toolbar

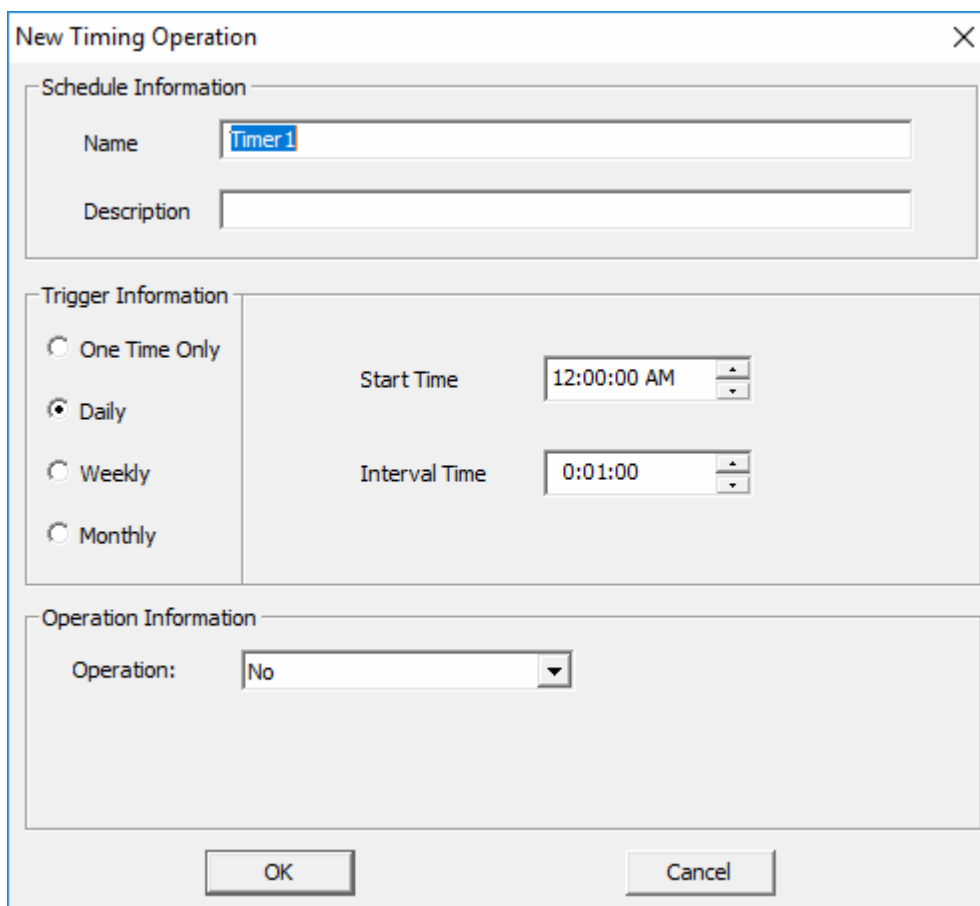
Main Menu	Submenu	Icon	Function
File	New(Ctrl+N)		New a schedule configuration file.
	Open(Ctrl+O)		Open existed schedule configuration file.
	Save(Ctrl+S)		Save edited or modified schedule configuration file to hard disk.
	Save As(F12)		Save the original file as another schedule configuration file with a different name, meanwhile the original cannot be destroyed.
	Print(Ctrl+P)		Print schedule configuration file.
	Print Preview		Preview the print effect before printing.
	Print Settings		Preset the format of the print page to schedule file.
	Exit(X)		Exit HMI Configuration Software; prompt saving file.
Edit	Cut(X/Ctrl+X)		Cut selected segment and save it to clipboard.
	Copy(Ctrl+C)		Copy selected segment and save it to clipboard.
	Paste(V/Ctrl+V)		Insert the content in clipboard.
	Delete(Delete)		Delete added schedule task.
	Modify(Ctrl+M)		Modify added schedule task.
	Select All(Ctrl+A)		Select all.
	Add Timer Schedule Operation		Configure schedule task based on time trigger actions.

Main Menu	Submenu	Icon	Function
	Add Event Schedule Operation		Configure schedule task based on event trigger actions.
	Properties		Set refresh rate.
Help	About		Show the program information, version number and copyright.

4.9.3 Configuration Instruction

Add Timer Schedule Operation

It is used to accomplish the schedule tasks configuration based on time trigger actions. Click  in the toolbar, and New Timing Operation dialog will pop up as shown in *Figure 4-47*.



The dialog box titled "New Timing Operation" contains three sections:

- Schedule Information:** Includes a "Name" text field with "Timer1" entered and a "Description" text field.
- Trigger Information:** Includes four radio buttons for "One Time Only", "Daily" (selected), "Weekly", and "Monthly". To the right, there are "Start Time" and "Interval Time" fields, both set to "12:00:00 AM" and "0:01:00" respectively, with up/down arrows.
- Operation Information:** Includes an "Operation:" label and a dropdown menu currently set to "No".

At the bottom are "OK" and "Cancel" buttons.

Figure 4-47 New timing operation dialog box

New Timing Operation dialog box includes: "Schedule Information", "Trigger Information" and "Operation Information".

Schedule Information

- Name: Set a task name for current new timing operation. The name should begin only with letters, and consist only of letters, numbers and underlines with at most 50

characters. Default name is TimerN (Timer1, Timer2...)

- Description: It is used to describe the name of current new timing operation. It supports Chinese/English, numbers, symbols, etc.

Trigger Information:

- One Time Only: Set trigger information at a specific time point and the trigger is effective only once. Time and date should be set, as shown in *Figure 4-48*. In single trigger, users need to ensure a lag between trigger time and current time. For example, if the current time is 8/16/2021, 00:00:00AM, valid trigger time should be set later than the given time above.

Figure 4-48 Set date and time for single trigger

- Daily: Start from a time point every day and trigger circularly with a fixed interval time, so that the operation content will startup validly and continuously. Start time and interval time are required to be set for daily trigger

Figure 4-49 Set start time and interval time for continuous trigger

- Weekly: Set the trigger information of several days in each week. Users can set single trigger at a specific start time, and they can also make circularly trigger by setting stop time and trigger interval time.

Don't select "Stop Time" for single trigger. As shown in *Figure 4-50*. The system will trigger at 9 AM every day from Monday to Friday. However, if "Stop Time" is selected, as shown in the *Figure 4-51*. The system will trigger begin at 9 AM, and trigger once per hour until 3 PM. The interval time needs to be less than the margin of stop time and start time.

Figure 4-50 Trigger time setting in each week 1: not select "Stop Time"

Figure 4-51 shows a configuration window for weekly trigger settings. On the left, there are checkboxes for days of the week: Mon., Tues., Wed., Thurs., Fri., Sat., and Sun. The checkboxes for Mon., Tues., Wed., Thurs., and Fri. are checked. On the right, there are three time selection fields: 'Start Time' set to 09:00:00, 'Stop Time' checked with a dropdown set to 15:00:00, and 'Interval Time' set to 1:00:00.

Figure 4-51 Trigger time setting in each week 2: select “Stop Time”

- Monthly: Set the trigger information of the specified date in each month. “Last day” refers that the system will trigger until the last day of a month, no matter how many days it has. The operation is similar with that of weekly.

Figure 4-52 shows a configuration window for monthly trigger settings. On the left, there is a calendar grid with days 1 through 31. A checkbox labeled 'Last Day' is checked. On the right, there are three time selection fields: 'Start Time' set to 09:00:00, 'Stop Time' checked with a dropdown set to 15:00:00, and 'Interval Time' set to 1:00:00.

Figure 4-52 Trigger time setting for each month

Operation Information:

Operation options include: No; Run Script; Write Tag Value; Run Program; Pop-up Graphics; Open Graphics.

- No: Operation information can be none.
- Running script: Implement specified operation by running schedule script program as shown in *Figure 4-53*. Users can click the “Open” button to select the existing scripts or click “Edit Script” to edit a script.

Figure 4-53 shows a dialog box titled 'Operation Information'. It has a dropdown menu for 'Operation' set to 'Running Script'. Below it is a text field for 'Script Name' which is empty. To the right of the text field are two buttons: 'Open...' and 'Edit Script...'. At the bottom of the dialog are 'OK' and 'Cancel' buttons.

Figure 4-53 Run script

Select “Open” button in *Figure 4-53* and the script file selection dialog as shown in the *Figure 4-54* will pop up, and select the script.

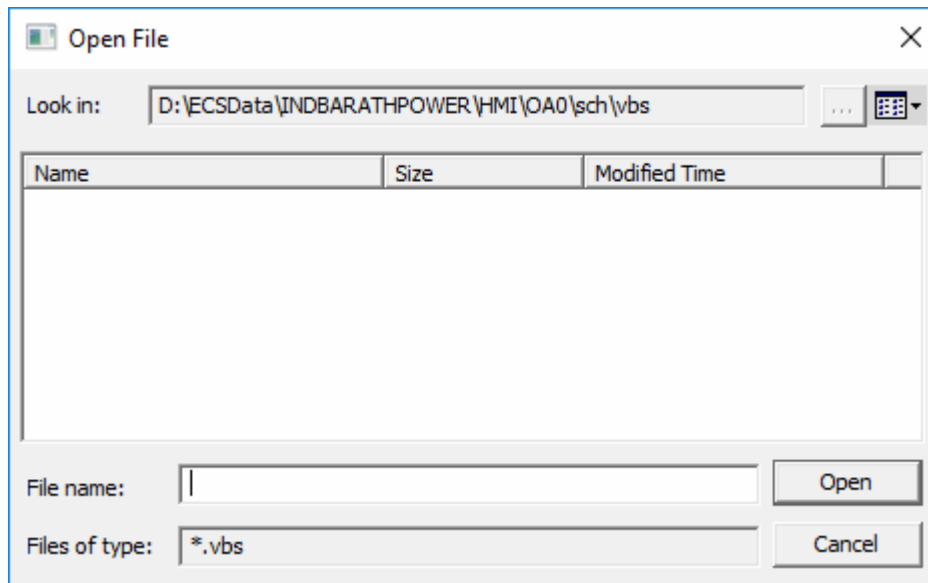


Figure 4-54 Open schedule script

Select “Edit Script” button in Figure 4-53 and the script edit window as shown in the Figure 4-55 will pop up.

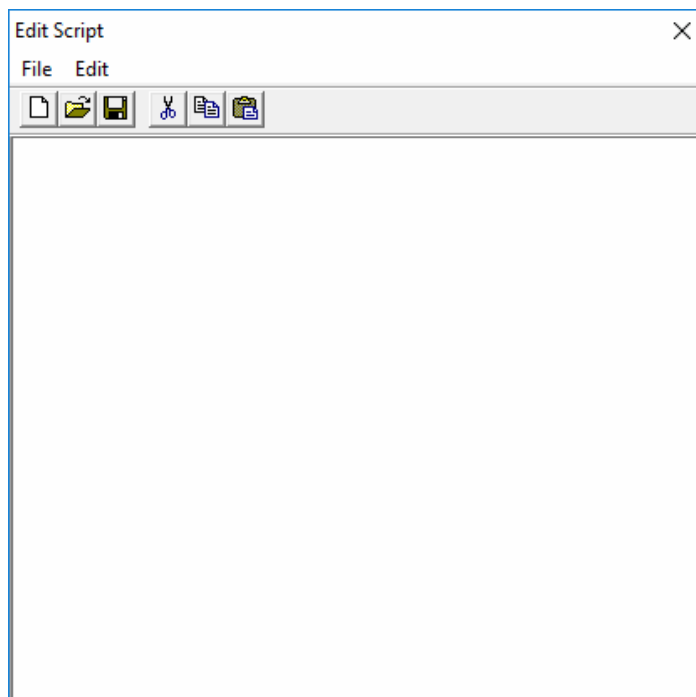


Figure 4-55 Schedule script edit window

Users can edit scripts in the above window and save it after finishing editing. Then press “Open” button and choose the saved script file.



Tip:

Editing schedule script follows the VBSCRIPT grammar.

- Write Tag Value: Users can evaluate the specified tag and set output value of digital or

analog tag, as shown in *Figure 4-56*.

Click “Open” button, the tag selector will pop up and select the tag to be written (including the operation domain of tag).

If the tag selected is digital, select “Digital” below the tag name and set the status ON/OFF; if the tag selected is analog, select “Analog” and set the value of it.

Figure 4-56 Write digital tag status

“Tag Name” shows the information of selected tag:

- Tag Name: AI00020007.PV refers to the tag in local operation domain.
- Tag Name: OA00254. AI00020000. PV refers to the tag in referenced domain, OA00254 is the alias of the referenced domain.

- Run Program: It can control one executable program running automatically by scheduling. “Parameters” refers operators can input by themselves when the executable program has parameters. Open a text file name “a” is shown below.

Figure 4-57 Run program

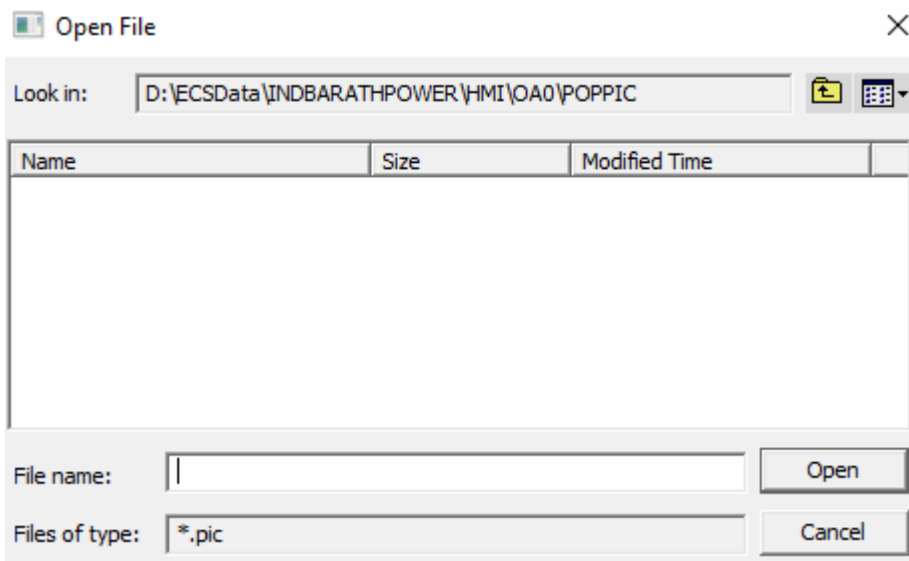
- Pop up Graphics: It is used to pop-up specified graphics with the given time or event when supervision is running. Parameters support graphics alias.

Click the “Open” button and users can select graphics in the pop-up graphics selection dialog. Parameters support graphics alias. Please see the *Graphics Builder User Manual* for using of graphics alias.

Figure 4-58 Pop-up graphics**Tips:**

Only popup graphics can be selected for graphics settings in schedule configuration, which should perform following operations in graphics drawing software:

- Set graphics as not “Full Screen”.
- Configure the graphics.
- Save as popup graphics.

**Figure 4-59 Select the popup graphics**

When the schedule software pops up graphics, it will be shown in different places, which conforming to following rules:

- If the left and top boundaries of popup graphics in page setting are not 0, it pops up according to the settings for left and top boundaries.
- If the left and top boundaries of popup graphics in page setting are both 0, graphics will pop up in different places. If the coordinate differential value of left upper corner between new popup graphics and existed one is in (20, 20), the new one will move (20, 20) to see if they are not crisscross. The operation will repeat until they are not crisscross.
- Open graphics

Similar with “Pop up Graphics”, and can open the certain graphics when monitoring is running in a certain period or event condition.

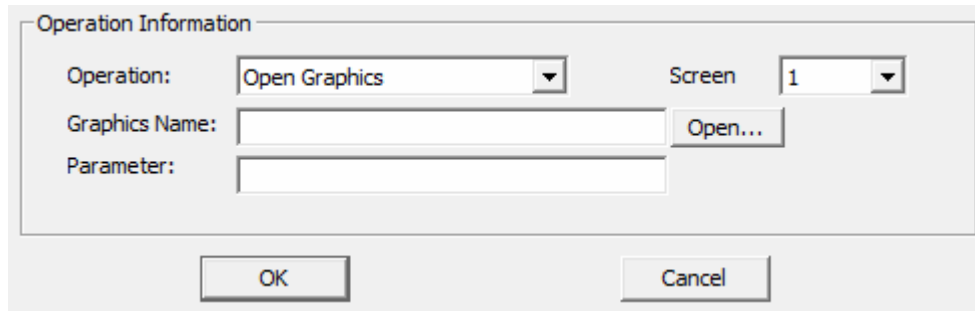


Figure 4-60 Open Graphics

As shown above, if select "Open Graphics", select display screen for the graphics form the drop-down menu of "Screen".


Graphics can be open in "Screen" only when satisfying conditions below:

- Set multi-screen in station.
- Select "Enable multi-screen when starting monitoring software".

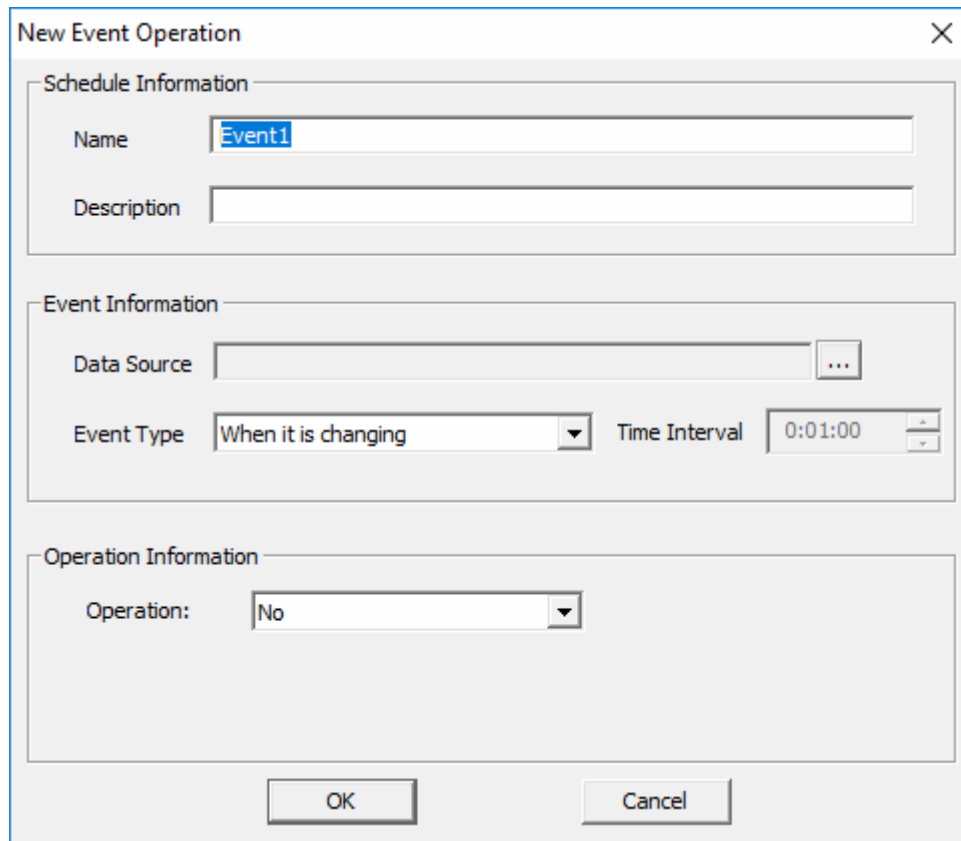
The difference between graphics and popup graphics is that the graphics only supports full-screen display, while popup graphics supports to set window size and title. Maximum 6 popup graphics or one general graphics can be pop up simultaneously in monitoring.

Add Event Schedule Operation

- It is used to accomplish the schedule tasks configuration based on event trigger actions.

Click , and the New Event Operation dialog will pop up, as shown in *Figure 4-61*.

New Event Operation includes "Schedule Information", "Event Information" and "Operation Information".



The dialog box is titled "New Event Operation" and contains three main sections:

- Schedule Information:** Includes a "Name" text box with "Event1" entered and a "Description" text box.
- Event Information:** Includes a "Data Source" text box with a browse button (three dots), an "Event Type" dropdown menu set to "When it is changing", and a "Time Interval" spinner box set to "0:01:00".
- Operation Information:** Includes an "Operation:" dropdown menu set to "No".

At the bottom are "OK" and "Cancel" buttons.


Figure 4-61 Add event operation dialog box

Schedule Information:

- **Name:** Set a task name for the new event operation. The name should begin only with letters, and consist only of letters, numbers and underlines with at most 50 characters. Default name is EventN (Event1, Event2...)
- **Description:** Describe the content of the new event operation. The setting requirements are the same as those of "Time schedule".

Event Information:

- **Data Source:** Event schedule information will decide whether trigger information is valid via changing the status of event tag. Users can select the tag that controls the event trigger through setting the data source.

Left-click the button  and the tag selector dialog box will pop up, in which users can choose the tag from database as event trigger tag.

- **Event Type:** It includes four trigger conditions: "When it is changing", "When it is true", "When it is false", "Always be true", "Always be false". When users select the trigger condition "When it is changing", "When it is true", "When it is false", the Time Interval dialog box at the right will be gray, which means scanning tag value with default time (1min); When users select "Always be true", "Always be false", They need to set time interval as the decision time for "Always be true" or "Always be false".

The screenshot shows the 'Event Information' configuration window. It includes a 'Data Source' field with a browse button, an 'Event Type' dropdown menu currently open with five options, a 'Time Interval' field set to 0:01:00, and an 'Operation' dropdown menu set to 'No'.

Figure 4-62 Event type



Tips:

When the data source is analog:

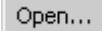
- When the event type is “when it is true”, the value of the analog from zero to non-zero, the event will be triggered. For example, the value of the analog from 0 to 100(non-zero), the event is triggered.
- When the event type is “when it is false”, the value of the analog from non-zero to zero, the event will be triggered. For example, the value of the analog from 100(non-zero) to 0, the event is triggered.
- When the event type is “Always be true”, the value of the analog is non-zero (and it is to or over the time interval), the event will be triggered. For example, the value of the analog always keeps 1(every time interval), the event is triggered.
- When the event type is “Always be false”, the value of the analog is zero (and it is to or over the time interval), the event will be triggered. For example, the value of the analog always keeps 0(every time interval), the event is triggered.

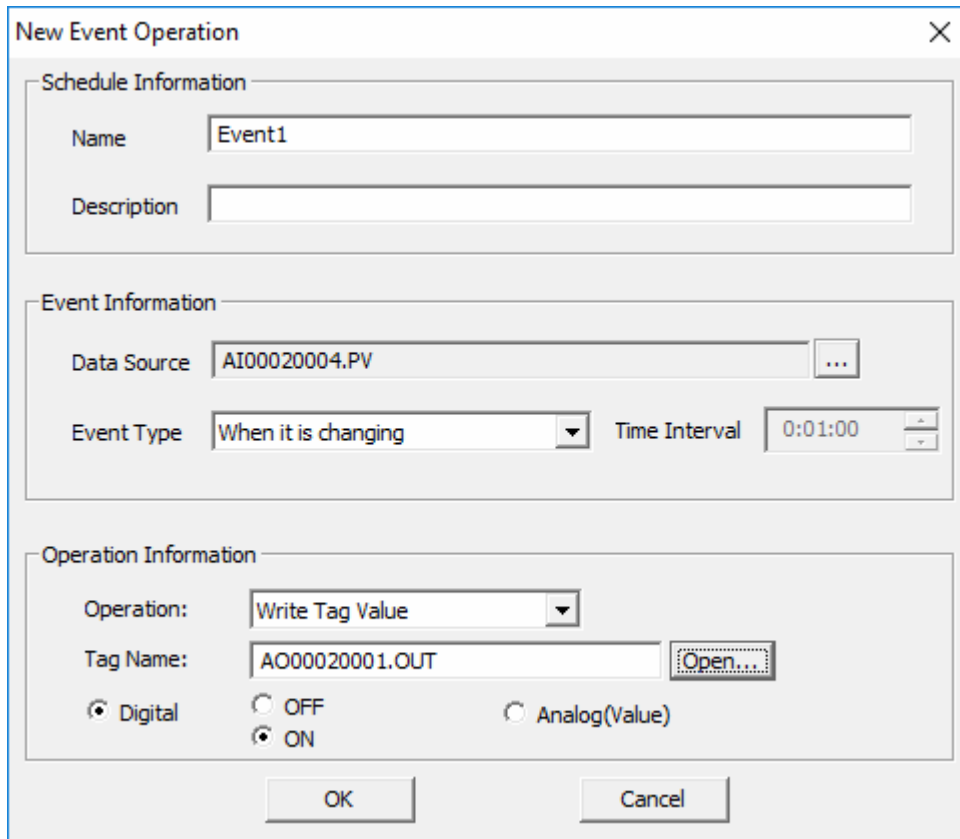
Operation Information:

Operation information of event schedule is consistent with that of time schedule.

Example:

Requirements: When the control switch (A_FT_200) is changing, write the digital tag DO00020000 as ON.

Steps: Set tag name for control switch in data source; set the event type as “When it is changing”; Set “Write Tag Value” operation and select digital tag HS1003A by clicking button  in the tag name, and select “Digital” and “ON”. Details can be found in Figure 4-63.

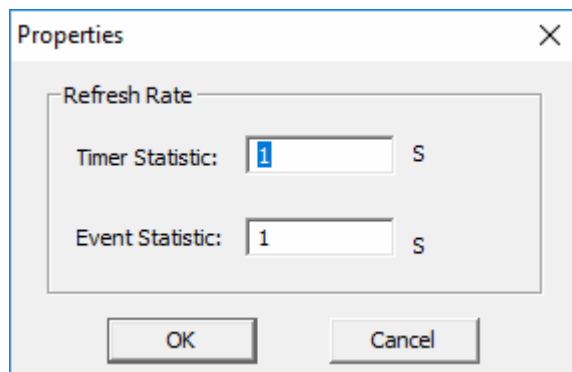


The 'New Event Operation' dialog box is divided into three sections: Schedule Information, Event Information, and Operation Information. The Schedule Information section contains fields for Name (set to 'Event1') and Description. The Event Information section contains a Data Source field (set to 'AI00020004.PV'), an Event Type dropdown (set to 'When it is changing'), and a Time Interval spinner (set to '0:01:00'). The Operation Information section contains an Operation dropdown (set to 'Write Tag Value'), a Tag Name field (set to 'AO00020001.OUT' with an 'Open...' button), and radio buttons for Digital (selected), OFF, ON, and Analog(Value). At the bottom are OK and Cancel buttons.

Figure 4-63 Setting of schedule example

Properties:

- **Timer Statistic:** It refers the time cycle of system's retrieval of time status. The time of timer statistics is 1s as shown in *Figure 4-64*, which means that the system will retrieve all the settings in the time schedule every second. If there is information matched, it will trigger. In default state, the refresh speed of timer statistics is 1 second.
- **Event Statistic:** It refers the time cycle of system's retrieval of event status, namely, the time cycle of system's retrieval of trigger information in event schedule. The default time is 1 second.



The 'Properties' dialog box has a 'Refresh Rate' section with two input fields: 'Timer Statistic' (set to '1' with a unit 'S') and 'Event Statistic' (set to '1' with a unit 'S'). At the bottom are OK and Cancel buttons.

Figure 4-64 Properties setting dialogue box

4.9.4 Run Schedule


Include the schedule files to run to the operation team and login the team in supervision. When the

trigger condition is met, corresponding schedule tasks will be executed.

4.10 Custom Key Configuration

Customized key-press configuration is used to set the function of customized keys on the keyboard of the operator to implement the operations by keyboard. Maximum 64 custom keys are supported within one operation team.

4.10.1 Create Custom Key

Right-click the “Unit1” and select **Operation/Add Custom Keys** in the pop-up menu, or click the icon  in the toolbar to add the custom keys nodes. It is named as “Custom Keys 1” by default, as shown in the Figure 4-65.

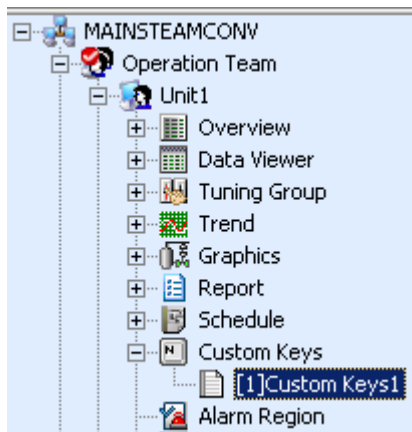



Figure 4-65 Add customized key-press node in the operation team

Right-click the “Custom Keys” and select “Add Custom Keys” in the right-key menu, or select

Operation/Add in the menu bar, or click the icon  in the toolbar to add a new custom keys. Users can modify the key value and key description of new custom key in the right list, as shown in the Figure 4-66.

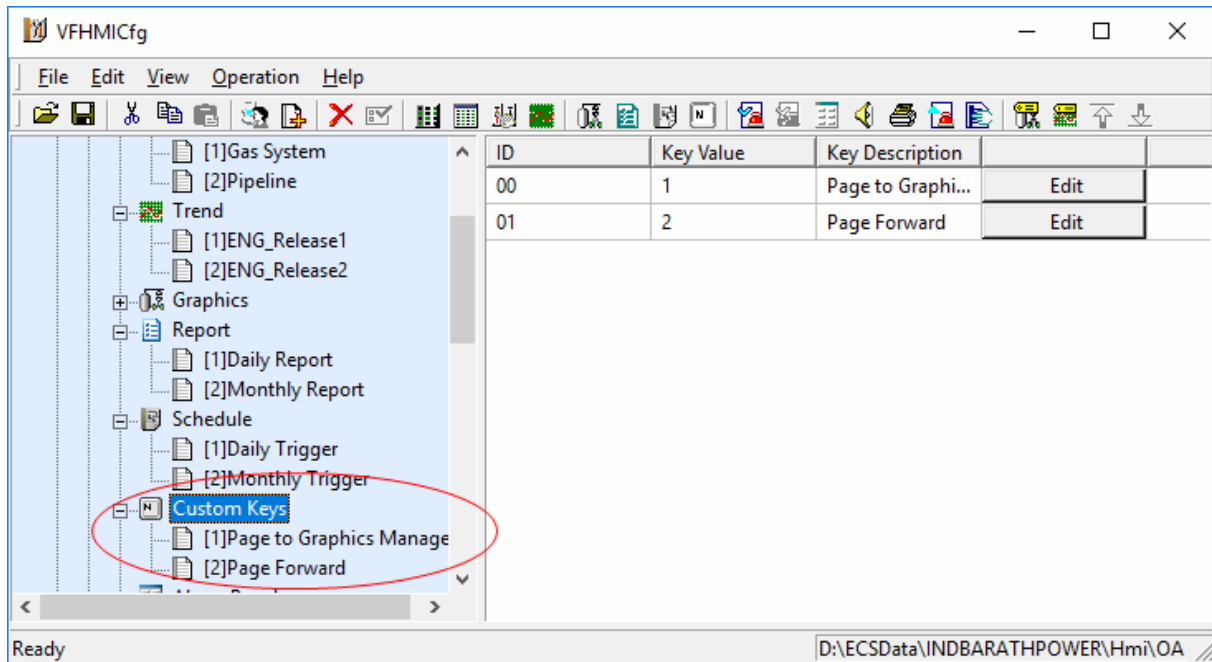


Figure 4-66 Add custom keys window

Double-click “Page to Graphics Manager” at the left or click “Edit” button at the right, the custom keys settings interface will pop up, as shown in the Figure 4-67.

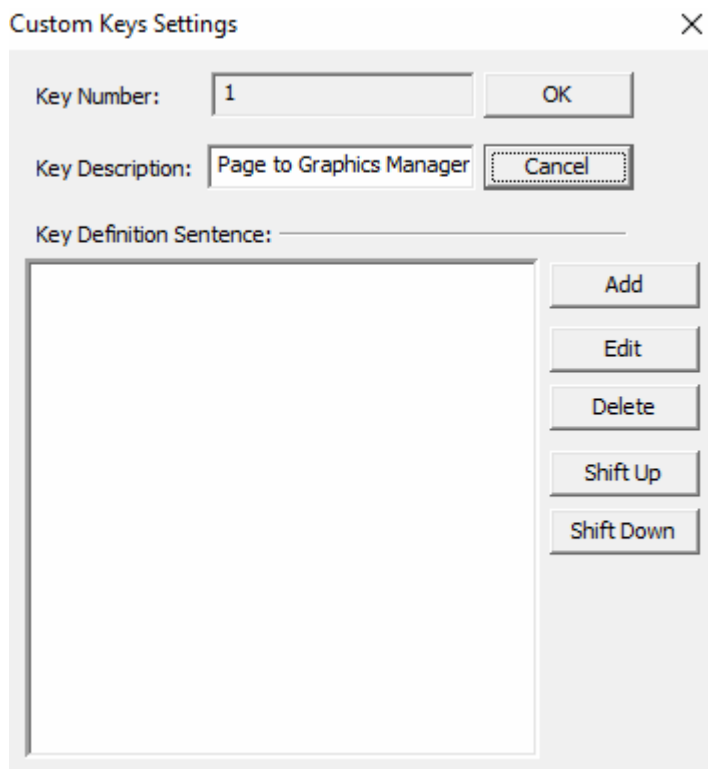


Figure 4-67 Customized key setting interface

- **Key Number:** Key number of custom keys, they are generated automatically and cannot be modified.
- **Key Description:** Descriptive information of custom keys.
- **Key Definition Sentence:** Display sentences of custom keys added.

- "Add" button: When click the button, the right-click menu will pop up including: Key-press Configuration, Page Settings.
- Click "key settings" and the following figure pops up.



Figure 4-68 Page of key setting

"Password", "Alarm Acknowledge", "Alarm Silence" and "Switch Key's Function" are listed on the above page of key-press configuration.

- If the user chooses "Password", then the password window (login window) will pop up when the user press key 1 on the operator keyboard. Other buttons work as the same.
- Select "alarm acknowledge" and "alarm silence", then it will separately execute alarm acknowledge and alarm silence.
- Select "Switch Key's Function", then this key is used to switch the mapping relationship between the keys on operator's keyboard and the HMI keys. For the custom keys switching configuration please refer to Switching Rules of Custom Keys.
- Page Settings

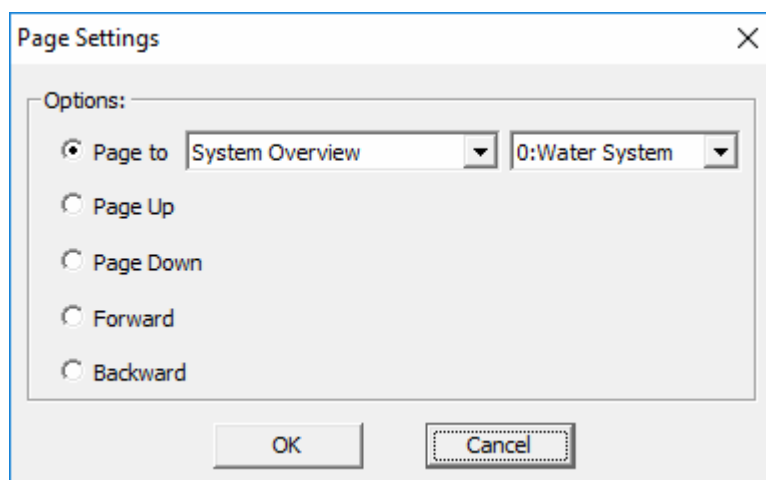


Figure 4-69 Page Settings Window

- Page to: This set applies to Overview Window, Trend Window, Tuning Group Window, Data Viewer Window and Graphics. For example, if the user chooses Page to Water System, then it will turn to page Water System in Graphics when the user press key 1 on

the operator keyboard.

- Page Up: Turn one page backward. If graphics is displayed currently in supervision, then the graphics will be turned one page backward when key 1 is pressed. Others work the same.
- Page Down: Turn one page forward. If graphics is displayed currently in supervision, the graphics will be turned one page backward when key 1 is pressed. Others work the same.
- Forward: Same as the button "Forward" on the supervision list header. It is not valid until "Backwards" is implemented. For example, when 2 steps are implemented: turn to the overview window first and then turn to the data viewer window, If the command of "Backwards" is implemented, it will turn to the overview window if choose Backward and it will turn to Data Viewer Window if choose Forward.
- Backward: Its function is the same as the button "Backward" on the supervision list header. Choose "Backward", and the previous step of the current operation will be implemented.

4.10.2 Custom Key Shows Alarm Status

The LED indicator of the custom key will show when an alarm generated in the page linked to the custom key in the operator keyboard.

- If it has no alarm, the light the custom key corresponding to is off.
- If it has alarms while not be all acknowledged, the light the custom key corresponding to is red and flashing.
- If it has alarms while be all acknowledged, the light the custom key corresponding to is red. \



Tips:

- When setting the key definition sentence for a custom key, only settings for a key and a turning page are enabled.
 - Select "Enable keyboard light alarm prompt" in "Startup Options" of VFSetup, if alarm raises in page linked by custom key, LED indicator of custom key can display according to the alarm status.
-

4.10.3 Switching Rules of Custom Keys

When the custom keys of switching are configured in the monitoring configuration, users can switch the corresponding relations between custom keys and monitoring configuration.

- Switching keys should be configured in pairs

If set the custom key1 as the switching key, due to the custom key1 and custom key 33 are the same physical key (and so on), the custom key 33 can also be set as the switching key to


avoid confusion. If the custom key 33 is not set as the switching key, in the monitoring period, the custom key 33 will be forced to be the switching key and vice versa.

If custom keys 1, 2, 3 are set as the switching keys, custom keys 33, 34 and 35 are also switching keys in a similar way. Under the condition of multiple switching keys, status of all switching keys remain unified in the monitoring period.

- Switching rejects page-turning

If one certain custom key is configured “switching key” and “page turning”, press this custom key in the monitoring period, it only executes switching key’s function and the page turning in the configuration won’t take any effect.

4.11 Alarm Region Setting

The alarm region is added automatically when the operation team is added. The option can also be added manually by right-clicking "Unit 1" and selecting "Add Alarm Region" in the pop-up menu or selecting **Operation/Add Alarm Region** or clicking the icon  in the toolbar, as shown in the Figure 4-70.

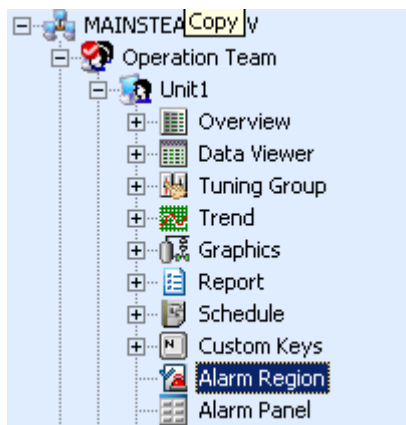


Figure 4-70 Add alarm region in the operation team

When double-click "Alarm region", the interface of alarm region settings will pop up as shown in Figure 4-71.

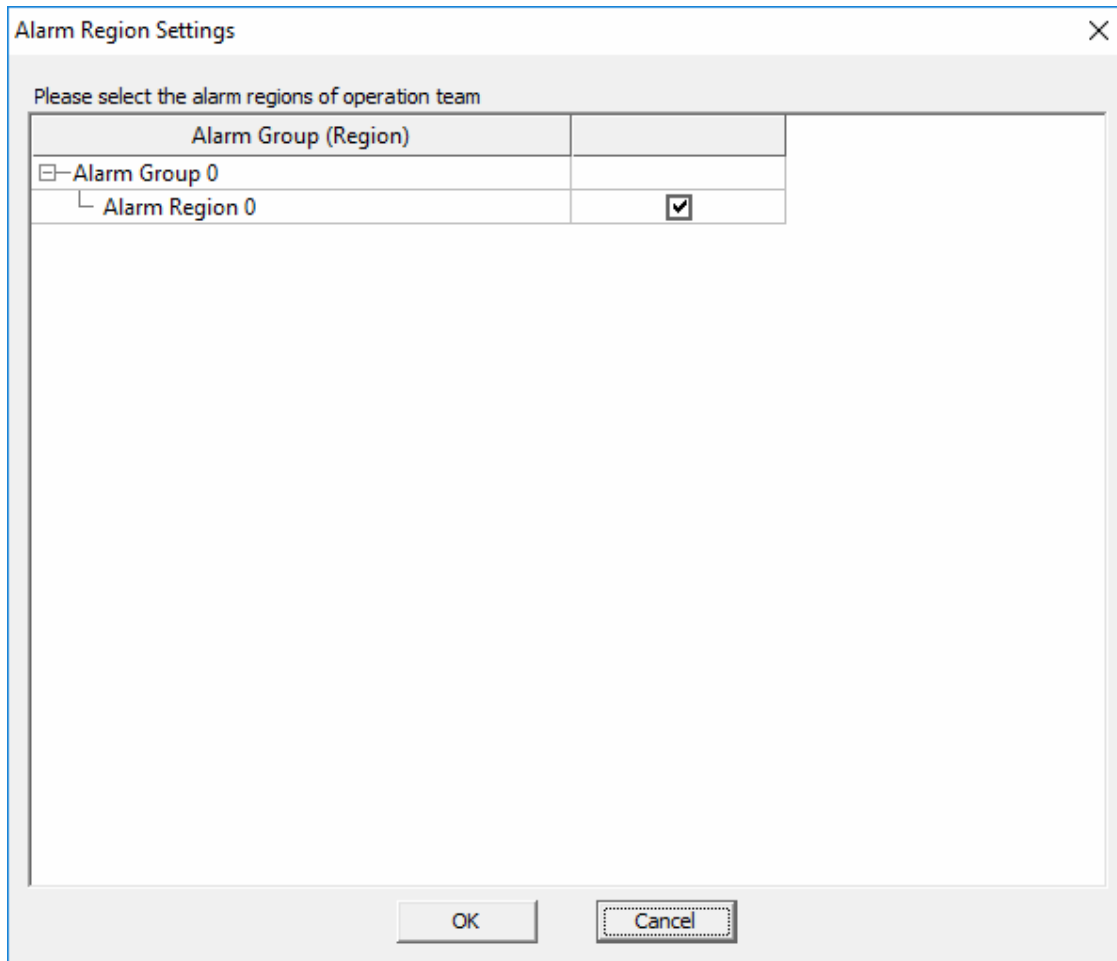


Figure 4-71 Alarm region settings

The interface of “Alarm Region Settings” lists all the alarm regions under the current operation domain. Alarms displayed on the supervision interface (alarm toolbar, alarm window, etc.) can be defined if selected. The one not be displayed can neither produce sound or be printed in real-time. By default, the alarm region under the operation domain corresponds to the tag group of the control domain supervised by current operation domain (Alarm group corresponds to control domain, and the 32 alarm regions in each alarm group correspond to 32 tag groups under control domain). Alarm groups can be customized by users. Please refer to part of the content of customized alarm group.

If an alarm region is selected, then the alarms generated by tags in the alarm region will be displayed in the supervision interface (alarm window).

- Select All, Clear All, Invert Selection

When click the list header of the alarm group name, a left-click menu showing “Select All, Clear All, Invert Selection” will pop up. Choose “Select All” and all the alarm regions in the group will be selected; Choose “Clear All”, and none of the alarm regions in the group will be selected; “Invert Selection” indicates the alarm regions selected and not selected are toggled.

- Shield switches

Shielding of alarms in operational domain classified by team or area is disabled by default. When “shielding of alarms in operational domain by team or area” in “global default settings” in Explorer is set to “enabled”, the interface to configure alarm regions is shown below:

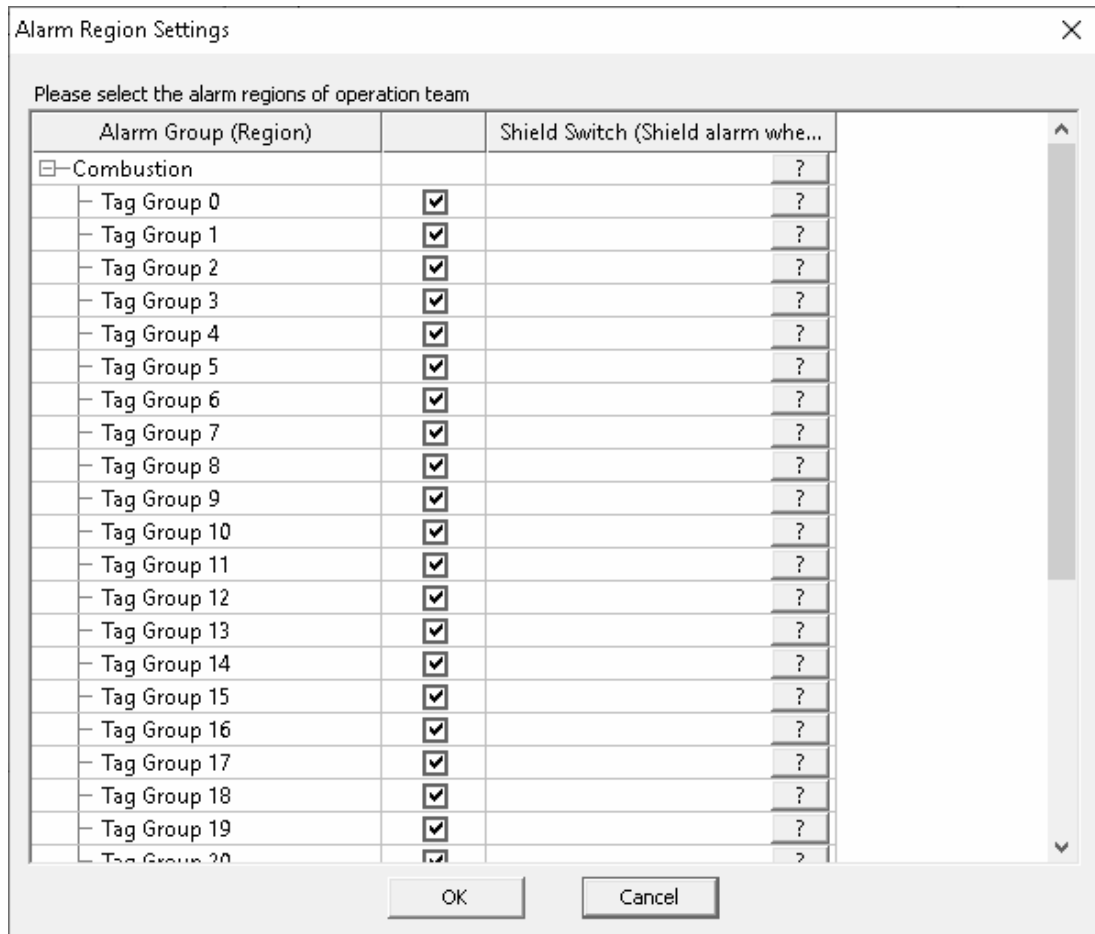



Figure 4-72 Alarm regions settings (After shielding function is enabled)

Click the shield switch  after each alarm region to pop up the tag selector. Select a tag as the shield tag in alarm region. When the tag is ON, alarm generated by the tag in the region is shielded, i.e. not shown in monitoring window, like alarm window. When the tag is OFF, it will be shown in alarm window. Enabled tag meets following conditions:

- It should be digital tag. Analog tag cannot be shield tag.
- It can be tag in local operation domain, or from the referenced domain.




Tips:

- All the alarm regions ranged from 0 to 31 will be listed in the alarm group whether or not there are tags in the alarm region.
- The alarm region setting of the operation team is invalid for judgments of alarm status of tags on the panel, i.e., all alarms of a single tag are visible on the panel. Alarms on the alarm bar and alarm list should be set whether they are visible for the current operation team.

-
- Set the ALARM, ACKED, DESC as invalid alarm region enable tag.
-

4.12 Alarm Panel Setting

Alarm panel is an important function of the alarm toolbar. It displays alarms in terms of alarm region, graphics interface and tag, which helps users get easier access to the current alarm status of the specific region (specific alarm region, designated graphics interface or relevant tags of importance) and deal with promptly.

The alarm panel setting option is added automatically when the operation team is added. The option can also be added manually by right-clicking the "Unit1" and selecting "Add Alarm Panel" in the pop-up menu or selecting **Operation/Add Alarm Panel** in the menu bar, or selecting the icon  in the toolbar, as shown in the *Figure 4-73*.

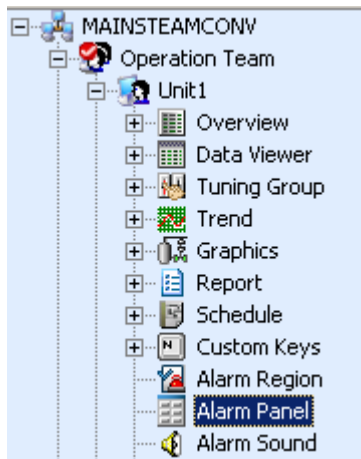


Figure 4-73 Interface of adding alarm panel in the operation team

Double-click "Alarm Panel", the interface of alarm panel configuration will pop up, as shown in the *Figure 4-74*.

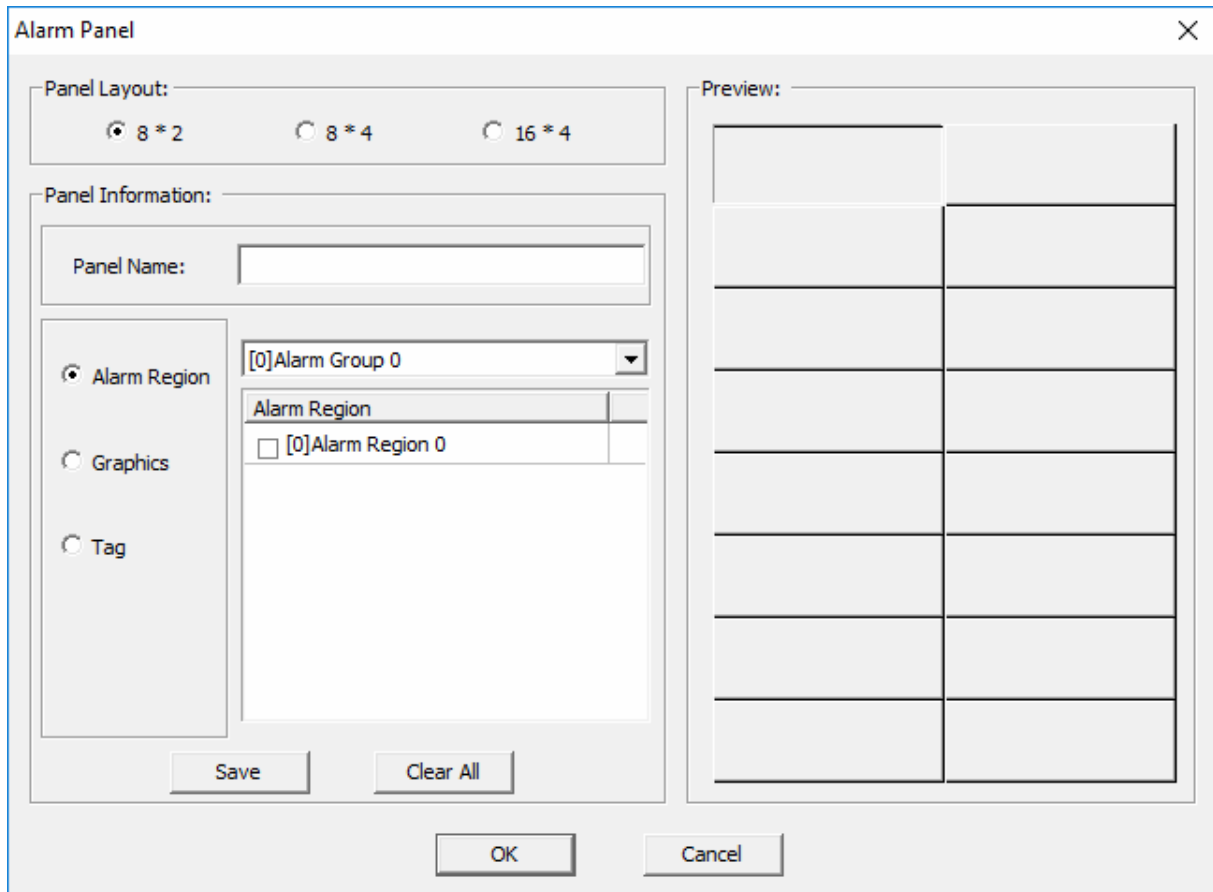



Figure 4-74 Interface of Alarm panel configuration


Panel Layout

Set layout of the alarm panel interface. Three layout types of interface are supported: 8*2, 8*4, and 16*4. The layout effect can be previewed in the preview window at the right.

Panel Information

- Set the displayed content and name of an alarm panel.
 4. Select an alarm panel in the box of "Preview" and input a name in the input box beside "Panel name".
 5. Select "Alarm Region", click the pull-down menu, select an alarm group and then select several alarm regions (The selected alarm regions are filtered according to alarm regions and only the selected alarm regions will be displayed).
 6. Click the button "Save" (Switch to another alarm panel, and the name and content of the previous alarm panel will be saved).
- Set an alarm panel to show the specified graphics
 7. Select an alarm panel in "Preview", input name in "Panel Name", such as "Testa".
 8. Select "Graphics" and click  to pop up the open file prompt, select a graphics.

The selected graphics can belong to the local operation domain or the referenced domain.

9. Click “Save” (or switch to another alarm panel directly, the name and contents of the previous alarm panel will also be saved).
- Set an alarm panel to show the specified tag
 - 1) Selecting an alarm panel in “Preview”, input name in “Panel Name”, such as “Testb”
 - 2) Select “Tag” and click , select tag from the tag selector pops up.

The selected tag can belong to the local operation domain or the referenced domain. As shown below, AI00020002 belongs to local operation domain. OA00254. AI00020006 belongs to referenced domain OA00254.

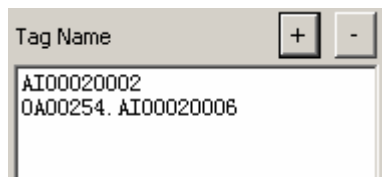


Figure 4-75 Select tag

- 3) Click “Save” (or switch to another alarm panel directly, the name and contents of the previous alarm panel will also be saved).

Tip:



- 1) When select an alarm panel and click the button "Clear All", the name and content of the alarm panel will be cleared.
 - 2) “ACTAPRI_” field of referenced domain tags should not be configured in alarm panel.
-

Configuration Results

When an alarm is generated by tags in the alarm panel in supervision (if the alarm panel is set as graphics, the alarm is generated by a DATALINK in the graphics), the panel will flash in red.

The alarm panel which has been set is shown in the *Figure 4-76*.

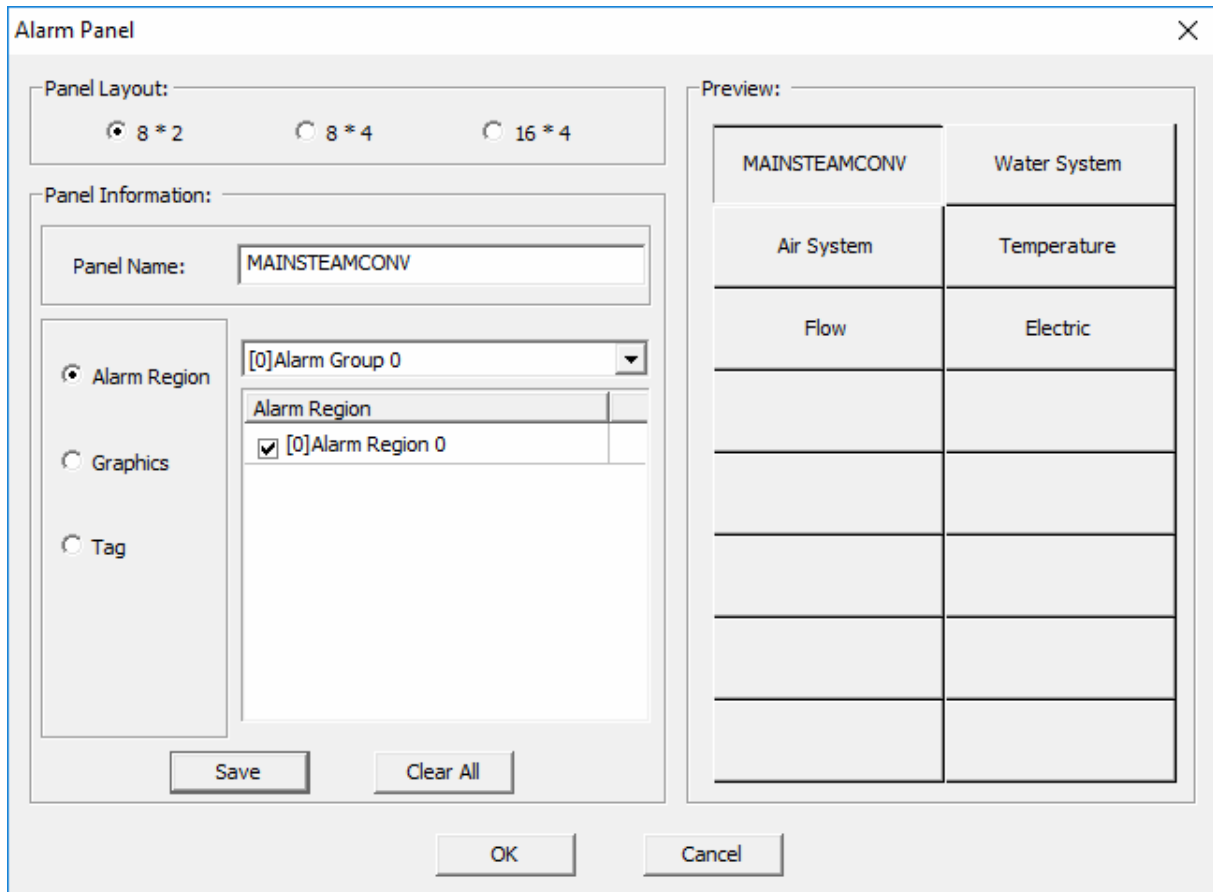




Figure 4-76 Alarm panel after configuration

4.13 Alarm Sound Setting

The function of alarm sound is that alarm sound is produced when an alarm is generated, thus draw the attention of relevant personnel.

The setting option of alarm sound can be added when the operation team is added. The option can be added manually by right-clicking "Unit1" and selecting "Add Alarm Sound" in the pop-up menu, or selecting **Operation/Add Alarm Sound** in the menu bar, or selecting the icon  in the toolbar. After successfully added, the icon  Alarm Sound will display in the navigation.

Double-click "Alarm Sound", and the configuration interface of alarm sound will pop up, as shown in Figure 4-77.

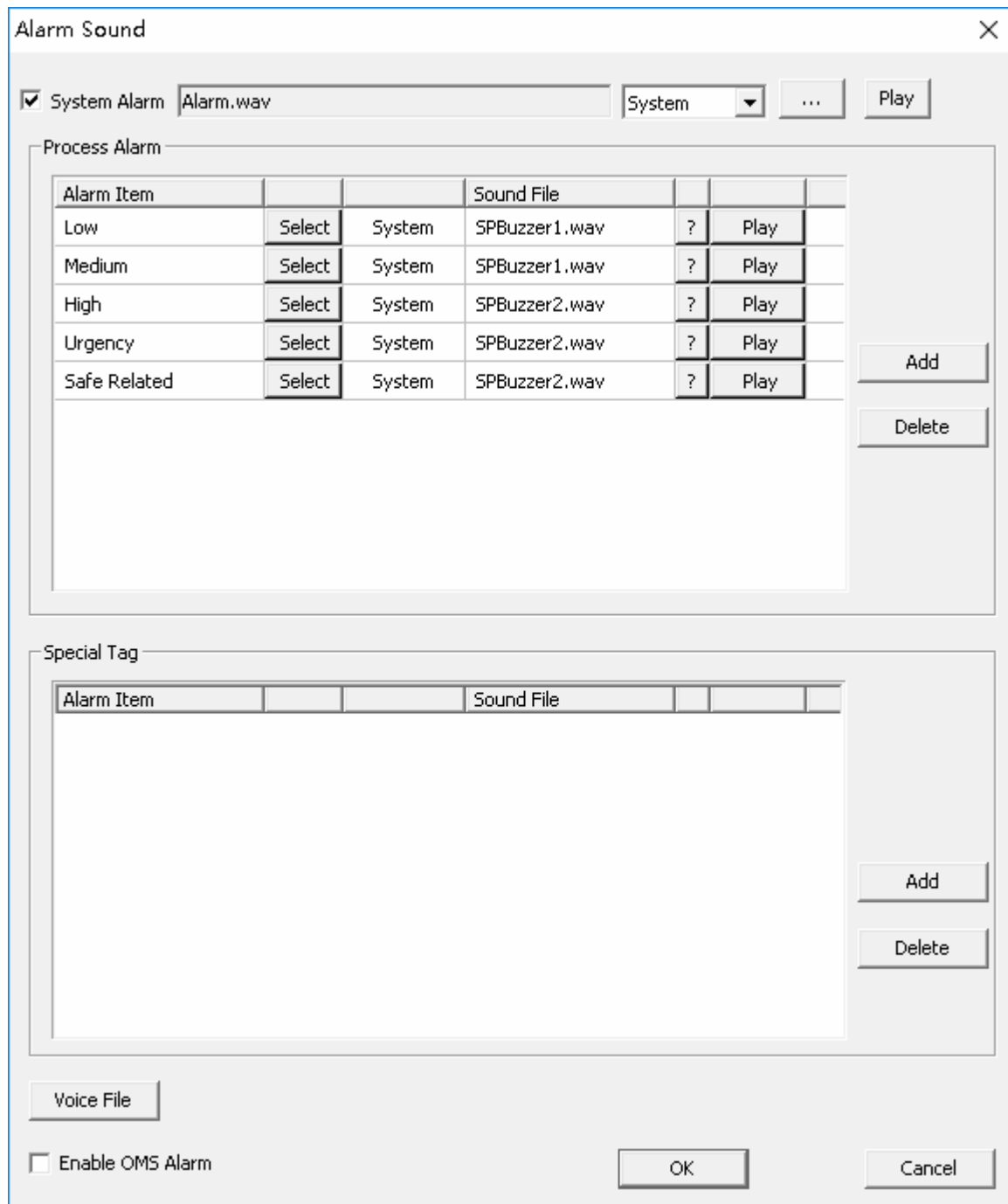


Figure 4-77 Interface of “Alarm Sound Configuration”



Tip:

Log priority alarm does not support setting alarm sound.

4.13.1 Sound Alarm Rule

The alarm sound sequence is determined by alarm sort rule and alarm status, tag name, etc.

- Alarm sort rule
 - If select “Sort by alarm priority” as alarm sort rule, and produce sound by the sequence “Alarm priority-> Whether Acknowledge-> Alarm Time-> Tag Name-> Alarm Type”.
 - If select “Sort by alarm time” as alarm sort rule, and produce sound by the sequence “Alarm Time-> Whether Acknowledge-> Alarm priority-> Tag Name-> Alarm Type”.

For example, if alarms of priority 1 and priority 0 raise, produce sound by alarm priority 1. If 2 alarms of priority 1 raise, produce sound by the latest one.

Some alarm priorities are shown in Table 4-4.

Table 4-4 Part of the alarm type priority table

Alarm Type	Description	Alarm priority
HHH	HHH Limit Alarm	3
LLL	LLL Limit Alarm	3
HH	HH Limit Alarm	2
LL	LL Limit Alarm	2
ERR	Error	2
H	High Limit Alarm	1
L	Low Limit Alarm	1
OUTH	Output High Limit Alarm	1
OUTL	Output Low Limit Alarm	1
ON	On Status Alarm	1
OFF	OFF Status Alarm	1
DPV	Variance Ratio Limit Alarm	1


- When the alarm generated by a special tag is the current highest priority alarm, alarm sound will ring as settings in special tag.
- When system alarm and process alarm is generated simultaneously,
 - If the alarm sort rule is “Alarm Time”, when the system alarm and process alarm are in the same priority, produce alarm sound by the latest alarm.
 - If the alarm sort rule is “Alarm priority”, produce sound by system alarm no matter which one raises first, and even when process alarm priority is higher than system alarm.
- The current alarm sound won't ring again after confirming, then the alarm with the highest priority among the rest will ring alarm sound.
- The alarm won't ring alarm sound after switching to mute mode. The new generated alarm will ring alarm sound according to Rule 1, regardless of the alarms before mute.
- Alarm sound rules of reference domain

- If alarm sound is not configured in operation domain, all alarms of referenced operation domain by this operation domain will be silence when alarm happened.
- If alarm sound of alarm priority 1 and priority 2 configured in operation domain, alarm of priority 1 and priority 2 will sound when alarm happened, and alarm of priority 3 to priority 5 will be silence when alarm happened, and alarm of priority 6 will sound by file "SPBuzzer6.wav".
- If alarm sound of alarm priority 1 to priority 5 configured in operation domain, all alarms will sound when alarms happened, and alarm of priority 6 will sound by file "SPBuzzer6.wav".

4.13.2 Configuring Alarm Sound

The sound of system alarm, process alarm, special tags' alarm in the real-time monitoring can be specified in High-performanceHMI. So the operator can identify the alarms by the sound.

System Alarm

Select "System Alarm" and click  to set sound file. The alarm sound will ring according to Sound Alarm Rule when the system alarm is generated.

Process Alarm

Set the sound file for a certain alarm priority, which is the related sound to alarm generated in some alarm priority or over some alarm priority segment.

Configure alarm sound for process alarm in each priority by steps below.

1. Click "Select" in Figure 4-77 to select the alarm priority in "Alarm Priority Setting" dialog popped up.

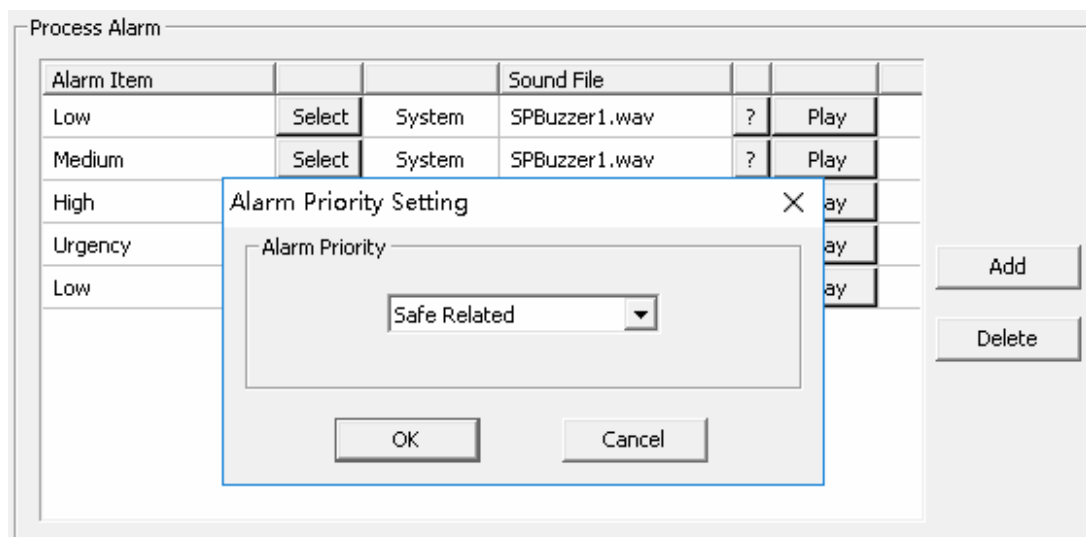


Figure 4-78 Set sound file for a certain alarm priority

**Tip:**

1. All alarm priorities supported by project are listed in process alarm in default, which are specified when crating the project. Please refer to *System Builder User Manual* for details.
2. By default, alarms in priority 1 and priority 2 will sound by file "SPBuzzer1.wav" when alarms happened, alarms in priority 3 to priority 5 will sound by file "SPBuzzer2.wav" when alarms happened.

3. Click  to set sound file. Click "Audition" to audition sound file.

Select a certain setting item, then click "Delete" to cancel the sound settings for a priority alarm.

Special Tag

Set the sound file for a certain alarm or certain types of alarms generated by a certain tag.

Click the "Add" button in Special Tag dialog box shown in *Figure 4-77* to add a setting item, as shown in *Figure 4-79*.

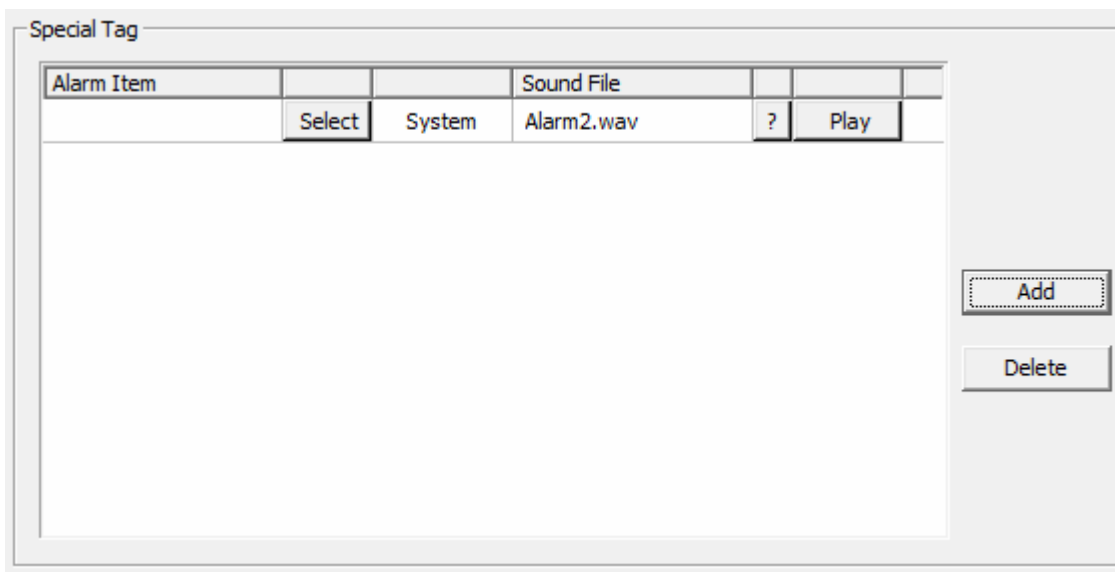



Figure 4-79 Set sound file for special tag

Click "Select", pop up a dialog box of Alarm Tag and Alarm Group Settings, click  to choose the tag name, then select the alarm type for this tag, as shown in *Figure 4-80*, different types of tags have different alarm types.

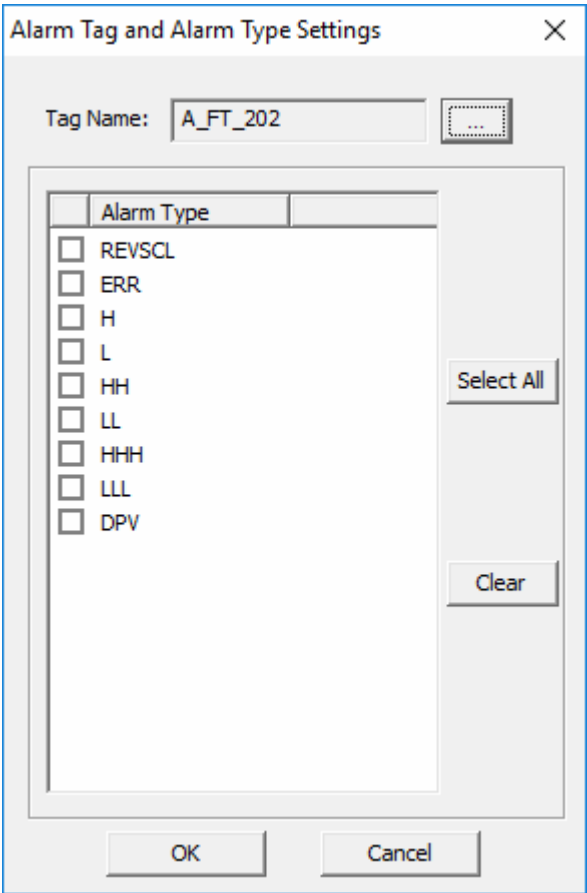



Figure 4-80 Alarm type selection

The tag can belong to local operation domain, or the referenced domain, as shown below:

- OA00254.AI00020000.PV[ERR] is a tag in the referenced domain OA00254.
- AI00020001.PV is a tag in the local operation domain.

Alarm Item		Sound File		
OA00254. AI00020000. PV[ERR]	Select	Alarm2.wav	?	Play
AI00020001. PV[ERR]	Select	Alarm2.wav	?	Play

Figure 4-81 Alarm settings

Click  to set sound file. Click “Audition” to audition sound file.

Select a certain setting item, then click “Delete” to delete this setting item.



Tip:

For special alarm, it will not sound because the tag alarm priority is 0 or the priority becomes 0 due to dynamic modification.

Voice File

High-performanceHMI supports customizing the voice files based on real requirement. Specific steps are as follows.

1. In the dialog box shown in the figure 4-82, click "Voice File" to bring up the dialog shown below.

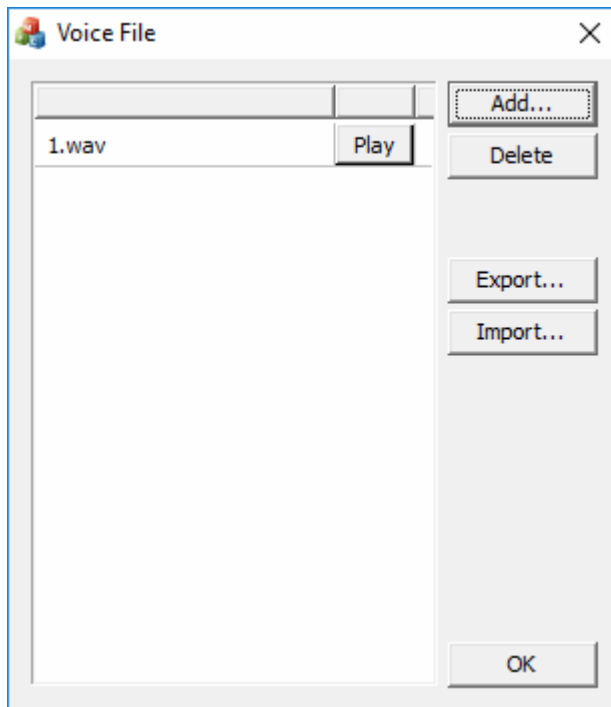


Figure 4-82 Voice file dialog

2. Click "Add" to bring up the "Voice Synthesis" dialog shown below.

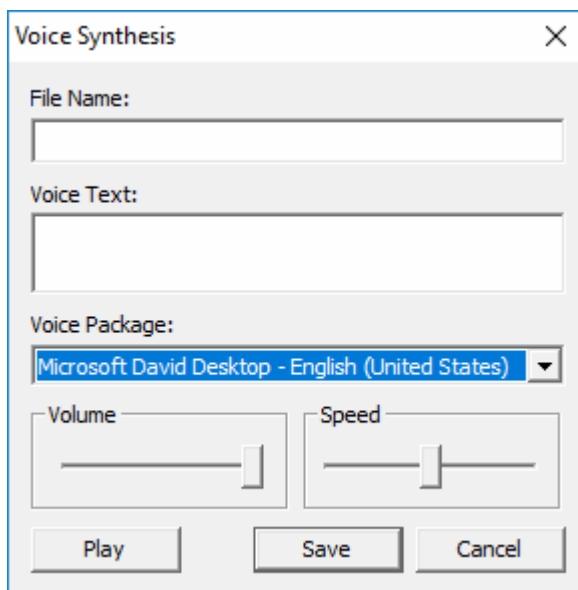


Figure 4-83 "Voice Synthesis" dialog

The voice file also can be added by importing and exporting, that is, export the voice file from one operation node and import to the other operation node.

- Configure the properties of voice synthesis file according to following table. Voice file is in the form of wav.

Items	Description
File Name	File name of generated voice file. It is in the form of string and less than 50 characters.
Voice Text	Use to configure the content to be played in voice file. It is in the form of string and less than 128 characters.
Voice Package	Use to select voice package that Interform the voice text into voice files.

User can confirm the voice file and adjust it by clicking "Audition", "Volume" and "Speed" after configuring the voice file properties.

- Click "Save" to generate a voice file with the suffix of "wav" after confirming the contents of voice file.



Tips:

In addition to adding a voice file by creating a new one, you can also add a voice file by exporting/importing, which means exporting the created voice file and then importing it in another operation node.

4.13.3 Configure OMS Voice Alarm


When the Control system and OMS system work together for production management, you can monitor the alarm of OMS in High-performanceHMI real-time monitoring software.

You can select whether to monitor the alarm in the interface shown in Figure 4-77:

- Check "Enable OMS voice alarm", after the integrated OMS of Control system generating operation instructions, High-performanceHMI real-time monitoring system will sound an alarm.
- If "Enable OMS voice alarm" is not checked, then the alarm sound of High-performanceHMI real-time monitoring is not affected by OMS operation instructions.


4.13.4 Alarm Silence

When alarms configured with alarm sounds are generated in supervision status, corresponding alarm sound will ring. If several alarms are generated simultaneously, the alarm sound will ring

according to Sound Alarm Rule. All generated alarms are muted if the alarm mute button  is clicked. And only when new alarm occurs next moment will the sound of alarm ring again.

4.14 Real-time Alarm Print Setting

The option of real-time alarm print setting is added automatically when the operation team is added. The option can also be added manually by right-clicking "Unit1" and selecting "Add Real-time Alarm Print" or selecting **Operation/Add Real-time Alarm Print** in the menu bar or

selecting the icon  in the toolbar, as shown in the *Figure 4-84*.

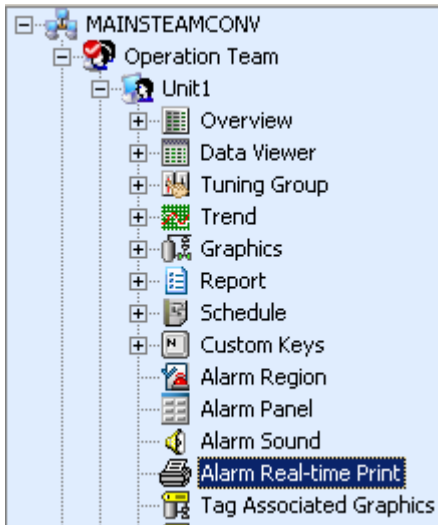


Figure 4-84 Interface of "Add Real-time Alarm Print in the Operation Team"

Double-click "Real-time Alarm Print", and the configuration interface of real-time alarm print will pop up, as shown in *Figure 4-85*.

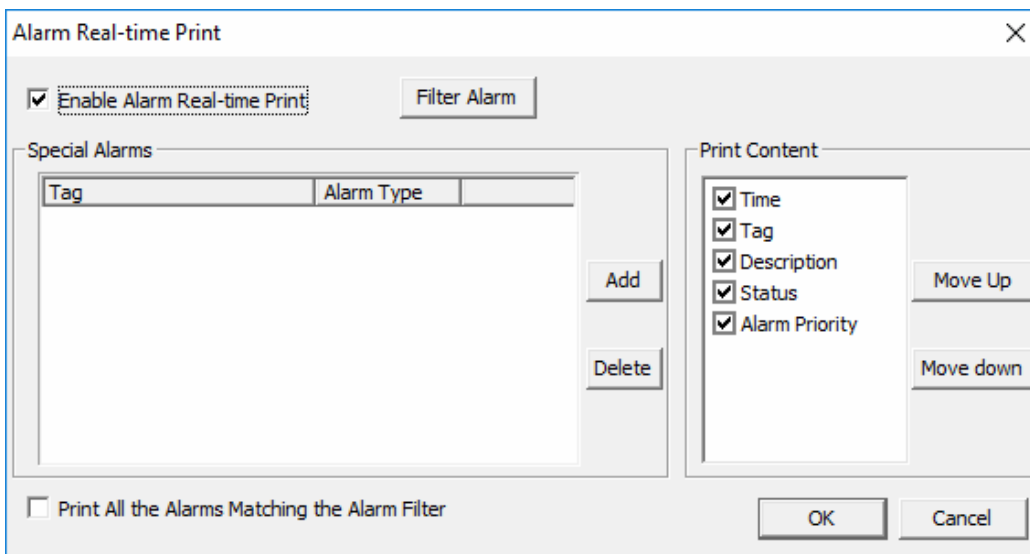



Figure 4-85 Interface of "Real-time Alarm Print setting"

When "Enable Alarm Real-time Print" is selected, options in the interface are available otherwise they would be gray and cannot be operated.

Special Alarms

One or several alarms to be printed and viewed can be set special alarms.

- Add a special alarm: When click the button "Add" and select  beside the tag name as shown in *Figure 4-86*, the tag selector will pop up; After a tag has been selected, all alarm types of the tag will be listed in the "Alarm Type" according to tag types (analog, digital, etc.) .Select the required alarm type.

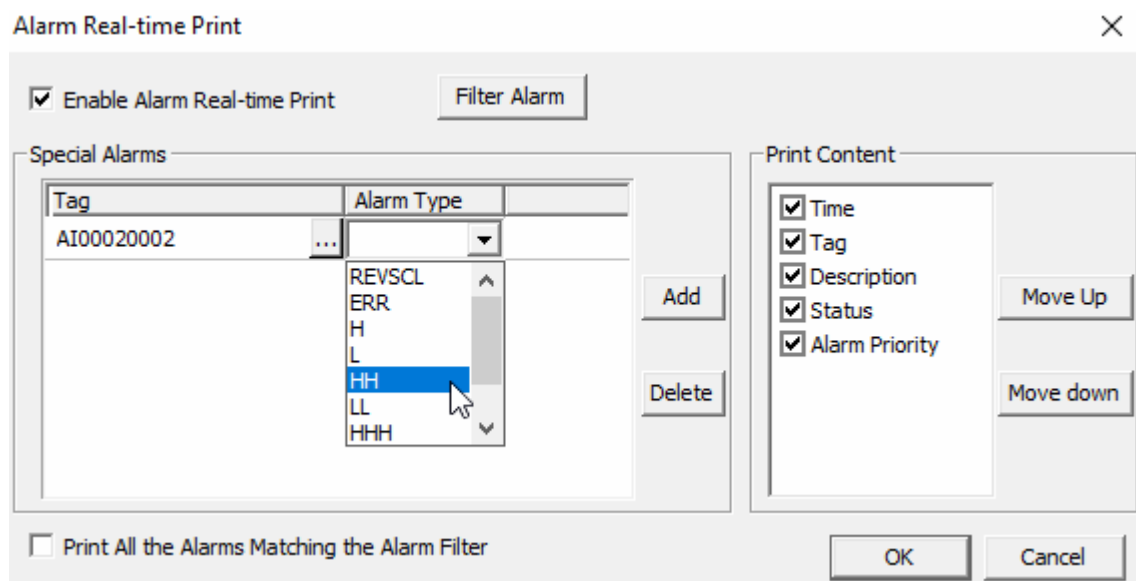


Figure 4-86 Add a special alarm

Tags from local domain and referenced domain can both be set as special alarm. As shown below, OA00254.AI00020000 is the tag of referenced domain OA00254, and AI00020001 is the tag of local domain.

Tag	Alarm Type
OA00254.AI00020000	ERR
AI00020001	HHH

Figure 4-87 Special alarm tag

- Delete a special alarm: Select a special configured alarm and click the button "Delete". If the button is clicked before any special alarm is selected, a prompt of "Please Select the item which needs to be deleted" will pop up.

Alarm Filter

Click the button "Alarm Filter", and the interface of alarm filter setting will pop up, in which the users can set the alarm priority and alarm region.

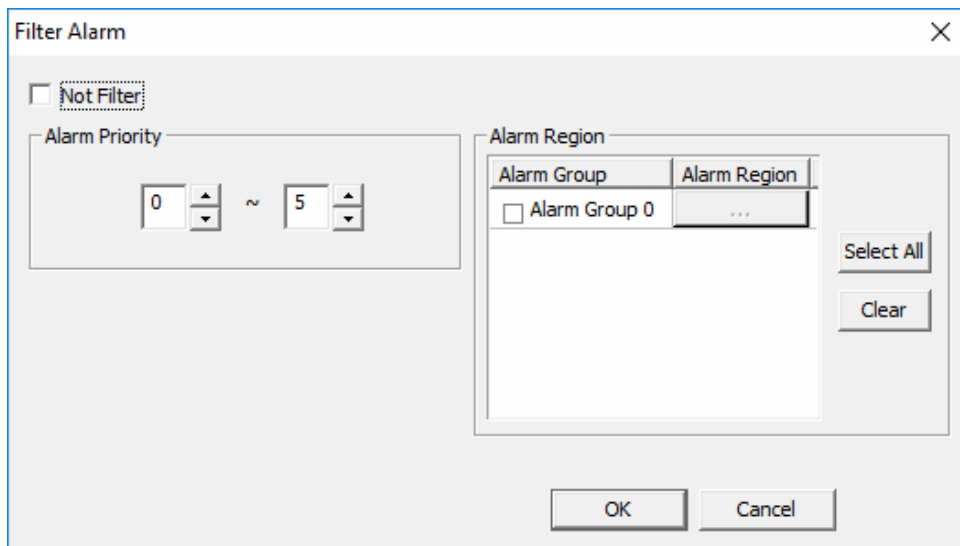


Figure 4-88 Alarm Filter Setting

Cancel the select of "Not filter", and the setting of alarm priority and alarm region are available.

- Alarm priority filter setting: Input the starting and end priorities in "Alarm Priority" (If the starting priority is bigger than the end priority, click "OK" and the two values will be exchanged automatically).

The starting and end priorities cannot exceed the alarm priorities supported by project.

- Alarm region filter setting: Select an alarm group and click the corresponding alarm region button, the dialog box of alarm region selection will pop, shown in *Figure 4-89*. When click "Region name", three options "Select all, Clear, Invert selection" will pop up, which all regions can be selected or cleared by. Click "OK" after the alarm regions have been selected. If no region is selected in an alarm group, the hook before the group will disappear automatically, i.e. the group is not selected. All groups can be selected or cleared by clicking the button "Select All" or "Clear".

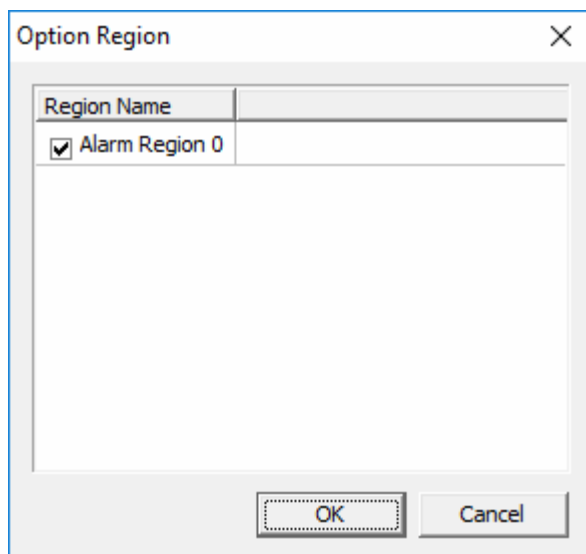


Figure 4-89 Option Region

**Tips:**

Only alarms in the setting range of alarm filter can be printed in real-time. If a special alarm has been configured but it is not in the filter range, then the alarm won't be printed even if it is generated in supervision status.

The alarm group is the selected alarm group in the alarm region.

Print All the alarms Matching the Alarm Filter

When the option is selected, setting of special alarm part becomes unavailable (gray), as shown in *Figure 4-90*. All alarms matching the alarm filter generated in supervision status will be printed.

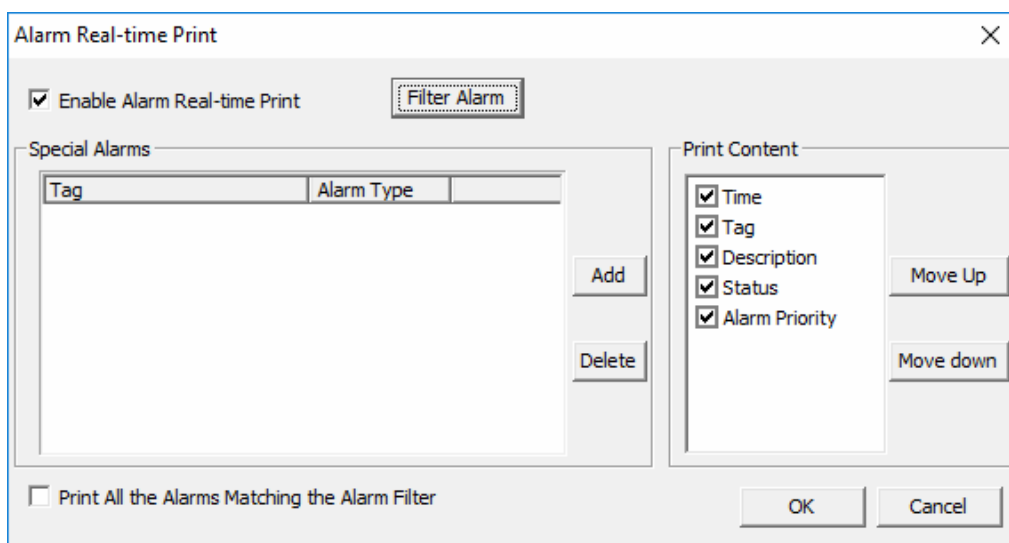


Figure 4-90 Print All Alarms Matching the Alarm Filter

Print content

Content of real-time alarm print includes time (time when alarms are generated), tag (the tag generates the alarm), description (description of the tag which generates the alarm), status (alarm type generated), and alarm priority. Of the above five, one or more items can be selected. Display sequence of content can be tuned by the shift up/shift down button. Items should be selected before the button is clicked. Otherwise, corresponding window of prompt will pop up.

Click "OK" and setting of real-time alarm print is finished.

**Tip:**

In supervision status (when printer is set correctly), alarms will be printed automatically when they are generated.

4.15 Alarm Pop-up Settings

Alarms of important tags are concerned most by monitoring use in real-time monitoring, which can be popped up automatically via setting the pop-up alarm, to make sure that user will not miss any important alarm in monitoring.

Set the pop-up alarm in VFHMiCfG by steps below to achieve the pop-up alarm function in real-time monitoring:

1. Right-click operation team like “Team0001” in the VFHMiCfG, and select “Add Alarm Popup”, or select the commands in menu bar **Operation/ Add Alarm Popup**, or click



in toolbar to add the popup alarm, as shown below.

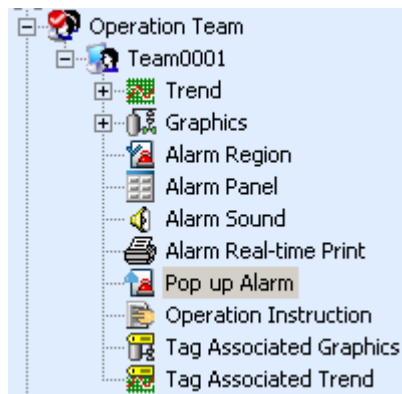


Figure 4-91 Add Pop-up Alarm

2. Double-click “Pop-up Alarm” to open the configuration interface, as shown below.

Alarm Pop-up

Alarm will pop up when satisfying alarm priority or special tag alarm as follows:

Alarm Priority

Alarm Item		
------------	--	--

Add

Delete

Special Tag Alarm

Alarm Item		
------------	--	--

Add

Delete

Export

Import

☐ Show acknowledged alarm

☒ Show latching alarm

OK

Cancel

Figure 4-92 Add pop-up alarm

Display rules of alarm pop-up in “Alarm Pop-up” interface are shown below:

- Show acknowledged alarm

Unselect the item in default, i.e. acknowledged alarm will not be shown.

- Show latching alarm

Select the item in default, i.e. latching alarm will be shown in alarm list.

3. Configure alarm pop-up by alarm priority or special tag.

- Configure by Alarm priority

Click “Add” button in the right of “Alarm priority” to add an alarm priority. Click “Select” to pop up the priority settings interface below.



Figure 4-93 Alarm priority Settings

Select the alarm priority for pop-up alarm from the drop-down menu of “Alarm Priority”, in which listing the alarm priorities supported by current project.

Select an alarm priority and click “Delete” to delete it.

■ Configure by Special Tag Alarm

Click “Add” button in the right of “Special Tag Alarm” to add a special tag alarm. Click “Select” to pop up the “Alarm Tag and Alarm Group Settings” interface below.

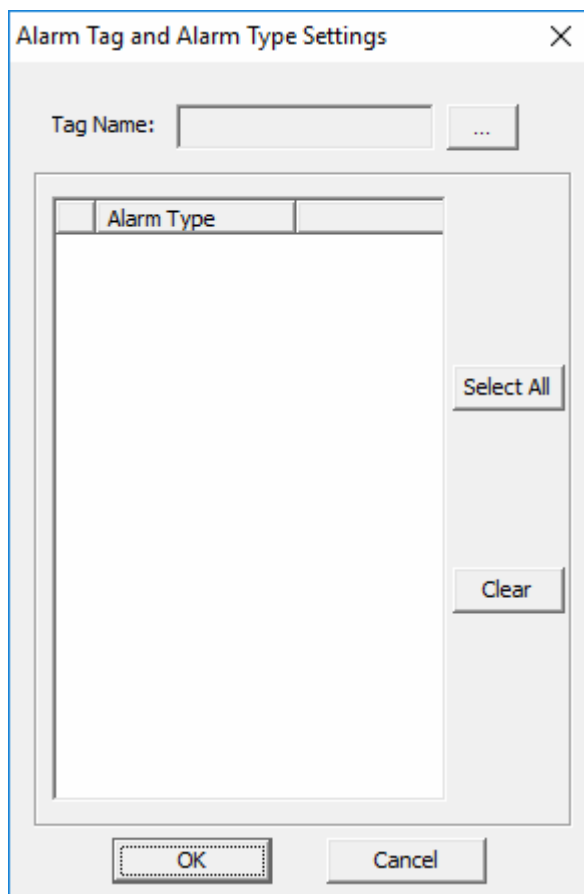



Figure 4-94 Alarm Tag and Alarm Group

Click  to open the tag selector, which shows tags both from local domain and referenced domain. Each tag is shown in one line.

**Tips:**

For special alarm, it will not pop up because the tag alarm priority is 0 or the priority becomes 0 due to dynamic modification.

Click "Import" and "Export" buttons in "Special Tag Alarm" pane to import/export .csv file.

4.16 Tag Associated Graphics Setting


The function is used to associate a tag to a graphics in the current operation team, realizing the quick jump from tags in the supervision window to graphics.

4.16.1 Instruction

You can specify the relationship between the tags and the graphics by auto scanning or manual setting.

Add Tag Graphics Association in Operation Team

The tag associated graphics setting is added automatically when an operation team is added. It can also be added manually by right-clicking "Unit1" on the interface of VFHMICfg and selecting "Add Tag Associated Graphics" in the pop-up menu or selecting **Operation/Add Tag Associated**


Graphics in the menu bar or selecting the icon  in the toolbar, as shown in the *Figure 4-95*.

Alarm Real-time Print	ID	Name	File Name	Alias of Reference Do...
Operation Instruction	0	_ALM_SYS_STATE	? 111.pic	?
Tag Associated Graphics				
Tag Associated Trend				

Figure 4-95 Add Tag Associated Graphics Setting

Add or Scan Tag Graphics Association


**Tips:**


1. Each tag can only be associated with a graphics.
2. The function of auto scanning displays the icon  in the front lines of results in doubt (no corresponding graphics for the tag, more than one graphics of the tag or no tag for the currently configured graphics, etc.). The icon will not exist when returned to the tag associated graphics configuration page again after having switched to other configuration item.
3. When using the function of auto scanning, only the graphics of current

operation team can be searched.

4. Tag should be only associated with the graphics of current operation team, otherwise switch cannot be implemented in supervision.
-

Add or scan tag graphics association in the local domain or referenced domain by following steps.

1. Right-click "Tag Associated Graphics" in the figure above and the right-click menu will pop up as follows.
2. Add association
 - When "Scan Configured Graphics" in the pop-up right-click menu is selected, tags in the configured graphics in the current operation team will be searched and associated automatically.
 - When select "Add Tag Associated Graphics" or select **Operation/Add** in the menu bar, or click the icon  in the toolbar, an item of empty tag associated graphics setting will be added.
3. Configure association

Click  in the name column and select tags to be associated to graphics in the pop-up tag selector. For example, choose tag **PHASE1**, and click the button "OK", then the interface of "Tag Associated Graphics Query" will pop up, as shown in the *Figure 4-96*.

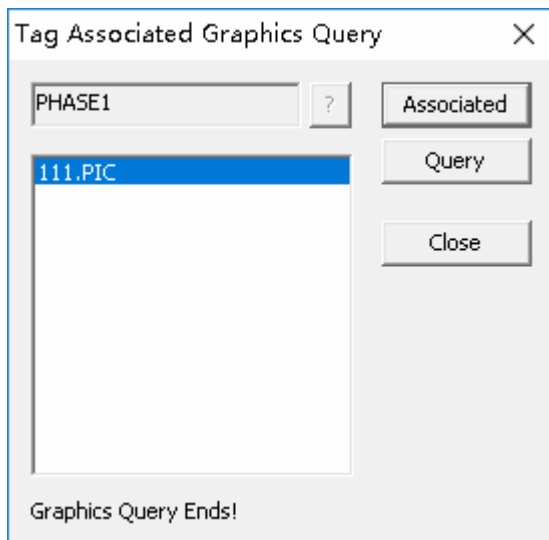


Figure 4-96 Interface of "Tag Associated Graphics Query"

4. Select "IND BHARAT" in the above figure and click the button "Associated", the tag and the graphics will be associated.

After scanning or adding the tag graphics association, the information region is shown as below:

- Tag OA00254.AI00020004 belongs to the referenced domain OA00254, the associated graphics is FAR1.pic.
- Tags AO00020000 and AI00020003 belongs to the local domain, the associated graphics FAR.pic.
- The "?" before the AO00020003 tag indicates that the association relationship is incorrectly configured, that is, the graphics name or the tag name is incorrect

ID	Name		File Name		Alias of Referenced Domain
0	OA00254.AI00020004	?	FAR1.pic	?	OA00254
1	AO00020000	?	FAR.pic	?	
2	AI00020003	?	FAR.pic	?	

Figure 4-97 Tag associated graphics

When the relationship is incorrect, you need to perform the following operations:

- Right-click the row and select "Search Graphics" in the right-click menu, and reselect the association relationship in the pop-up dialog box.
- If there is no associated graphics in the pop-up dialog box, you need to delete the associated relationship and scan it again.

4.16.2 Configure the Import/Export

The configuration of the graphics associated with tags supports import and export in the form of CSV files. After modifying the CSV export file and importing it into the software, the configuration workload can be reduced.

Configure of the export of graphics associated with tags

Through the following steps, you can export the configuration of the graphics associated with tags as a CSV file:

1. In the navigation tree, select "Tag Associated Graphics", and select "Export" in its right-click menu.
2. In the pop-up "Save As" dialog box, select the path and enter the file name. By default, the CSV export file name of the graphics associated with tags is "TagToGraph.csv".
3. Click "Save" to export the configuration of the graphics associated with tags.

The following figure is an example of the exported CSV file of the graphics associated with tags.

Tag2Graphic		
Tag Name	File Name	Ref OAName
DO11020010	PIC	
DO11020002	PIC	
DO11020006	PIC	
DO11020001	PIC	

Figure 4-98 CSV export example of graphics associated with tags

As can be seen from the above figure, the CSV export file of the graphics associated with tags mainly includes the following information:

- "Tag2Graph" is the identification of the exported file of the graphics associated with tags.
- "Tag Name" is the tag name in the graphics.
- "File Name" is the name of the graphics pic file.

Configure of the import of graphics associated with tags

Through the following steps, the CSV file of the tag association flow chart can be imported into the current configuration.

1. In the navigation tree, select "Tag Associated Graphics" and select "Import" in its right-click menu.
2. The import prompt box will pop up "The current configuration will be overwritten after import, do you want to continue?", click "Yes".
3. After selecting the import file in the pop-up "Open" dialog box, click "Open".
4. A prompt message "Import successful" pops up.

4.16.3 Monitoring status

After the supervision software is started up, input tag AI00100015 in the tag input box on the list header and then select the instrument box, as shown in the Figure 4-99.

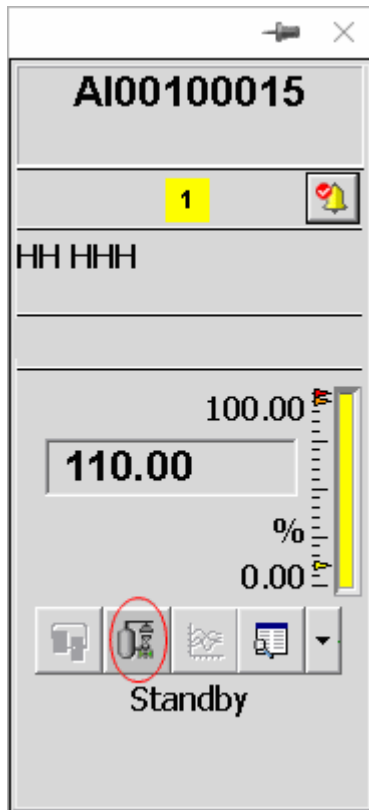


Figure 4-99 Instrument Box in Supervision Status


Click graphics icon above to switch the main window to the graphics “ENG_Release1” associated with the tag “AI00100015”.

4.17 Tag Associated Trend Display Setting

The function is used to associate a tag with a trend display in the current operation team, realizing quick jump from tags in the supervision window to the trend window.

4.17.1 Configuration in VFHMICfg

Add Tag Associated Trend in Operation Team

The tag associated trend window setting will be added automatically when an operation team is added. It can also be added manually by right-clicking "Unit1" in the interface of VFHMICfg and selecting "Add Tag Associated Trend Window" in the pop-up menu or selecting **Operation/Add Tag Associated Trend Window** in the menu bar, or users can select the icon  in the toolbar, as shown in the *Figure 4-100*.

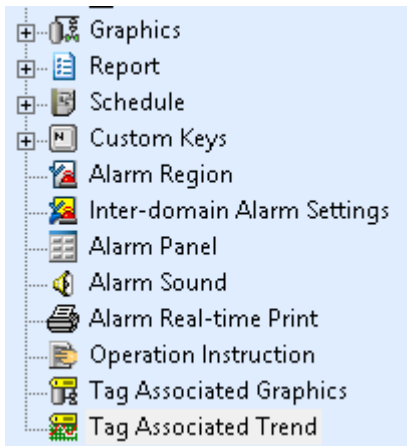




Figure 4-100 Add Tag Associated Trend Window Setting

Add or Scan Tag Associated Trend

User can add or scan tag associated trend in local domain by steps below.

1. Right-click "Tag Associated Trend" in the figure above and the right-click menu as follows will pop up.
2. Add association
 - Select "Scan Configured Trend Window" in the pop-up right-click menu, and tags in the configured trend display in the current operation team will be searched and associated automatically.
 - Right-click and select "Add Tag Associated Trend Window" or select **Operation/Add** in the menu bar, or click the icon  in the toolbar, an item of empty tag associated trend window setting will be added.
3. Configure association

Click  in the name column and select the tag to be associated with the trend window in the pop-up tag selector. For example, select tag AI00020000, and click the button "OK", then the interface of "Tag Associated Trend Display Query" will pop up, as follows. Select "Trend1" and click "Associated" to complete the association between the tag and the trend.

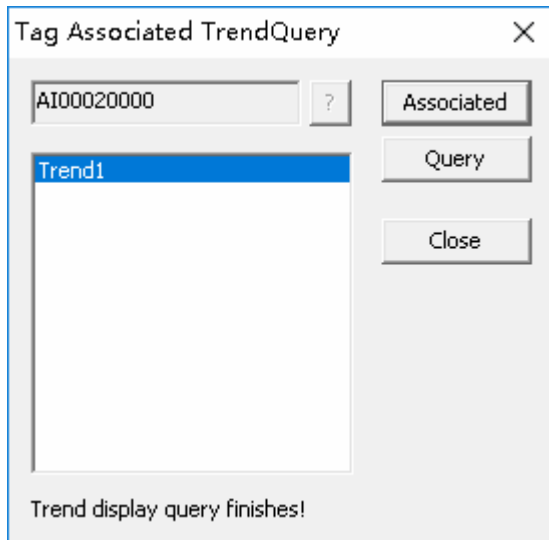


Figure 4-101 Interface of "Tag Associated Trend Display Query"

After scanning or adding the tag associated trend screen, its information area is displayed as shown in the figure below, where:

- AI00020000 tag is the tag in this operation domain, and its associated trend screen is the decompression furnace.
- DO11020012 with a "?" before the tag indicates that the association relationship is incorrectly configured, that is, the trend screen or tag name is incorrect

ID	Name		Display Name	
0	AI00020000	?	Trend1	?
1	DO11020012	?	Trend1	?

Figure 4-102 Example of tag associated trend

When the relationship is incorrect, you need to perform the following operations:

- Right-click the row and select "Search Trend Screen" in the right-click menu, and reselect the association relationship in the pop-up dialog box.
- If there is no associated trend screen in the pop-up dialog box, you need to delete the associated relationship and scan it again.

4.17.2 Configure the Import/Export of Tag Associated Trends

The configuration of the tag-related trend screen supports import and export in the form of a CSV file. After modifying the CSV export file and importing it into the software, the configuration workload can be reduced.

Through the following steps, you can export the configuration of the tag associated trend screen as a CSV file:

20) In the navigation tree, select "Tag Associated Trend Screen", and select "Export" in its right-click menu.

21) In the pop-up "Save As" dialog box, select the path and enter the file name. By default, the CSV export file name of the tag-related trend screen is "TagToTrend.csv".

22) Click "Save" to export the configuration of the tag associated trend screen.

The following figure is an example of the exported CSV file of the tag-related trend screen.

Tag2Trend	
Tag Name	Trend Name
DO11020011	Trend1
DO11020012	Trend1
DO11020013	Trend1
DO11020014	Trend1
DO11020015	Trend1

Figure 4-103 CSV export example of tag associated trend

As can be seen from the above figure, the CSV export file of the tag associated trend screen mainly includes the following information:

- "Tag2Trend" is the export file identification of the tag associated trend screen.
- "Tag Name" is the tag name in the trend screen.
- "File Name" is the name of the trend screen.

Import tag associated trend's configuration

5. Through the following steps, you can import the CSV file of the tag-related trend screen into the current configuration.
6. 23) In the navigation tree, select "Tag Associated Trend Screen", and select "Import" in its right-click menu.
7. 24) The import prompt box "will overwrite the current configuration after import, do you want to continue?" pops up, click "Yes".
8. 25) After selecting the import file in the pop-up "Open" dialog box, click "Open".
9. 26) A prompt message "Import successful" pops up.

4.17.3 Monitoring Status

After the supervision software is started up, input tag A_FT_200 in the tag input box on the list

header and then select the instrument box, which pops up as follows.

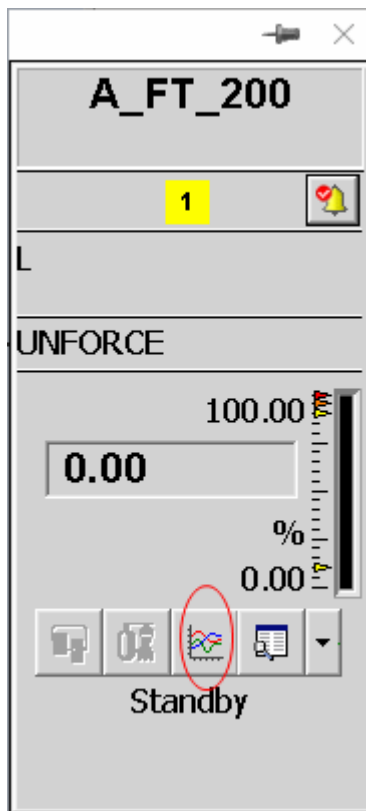


Figure 4-104 Instrument box in supervision

Click the trend window icon in the above figure, and the main window will jump to the trend window "ENG Release1" associated with tag "A_FT_200".



Tips:

1. Each tag can only be associated with a trend window.
2. The function of auto scanning displays icon  in the front lines of results in doubts (no corresponding trend window for the tag, more than one trend window of the tag or no tag for the currently configured trend window, etc.). The icon will not exist when returned to the tag associated trend display configuration again after having switched to other configuration item.

4.18 Operation Instruction

In the process of system operating, system will supply specific prompt information for users to achieve correct operation when certain event occurred to keep field control stable.

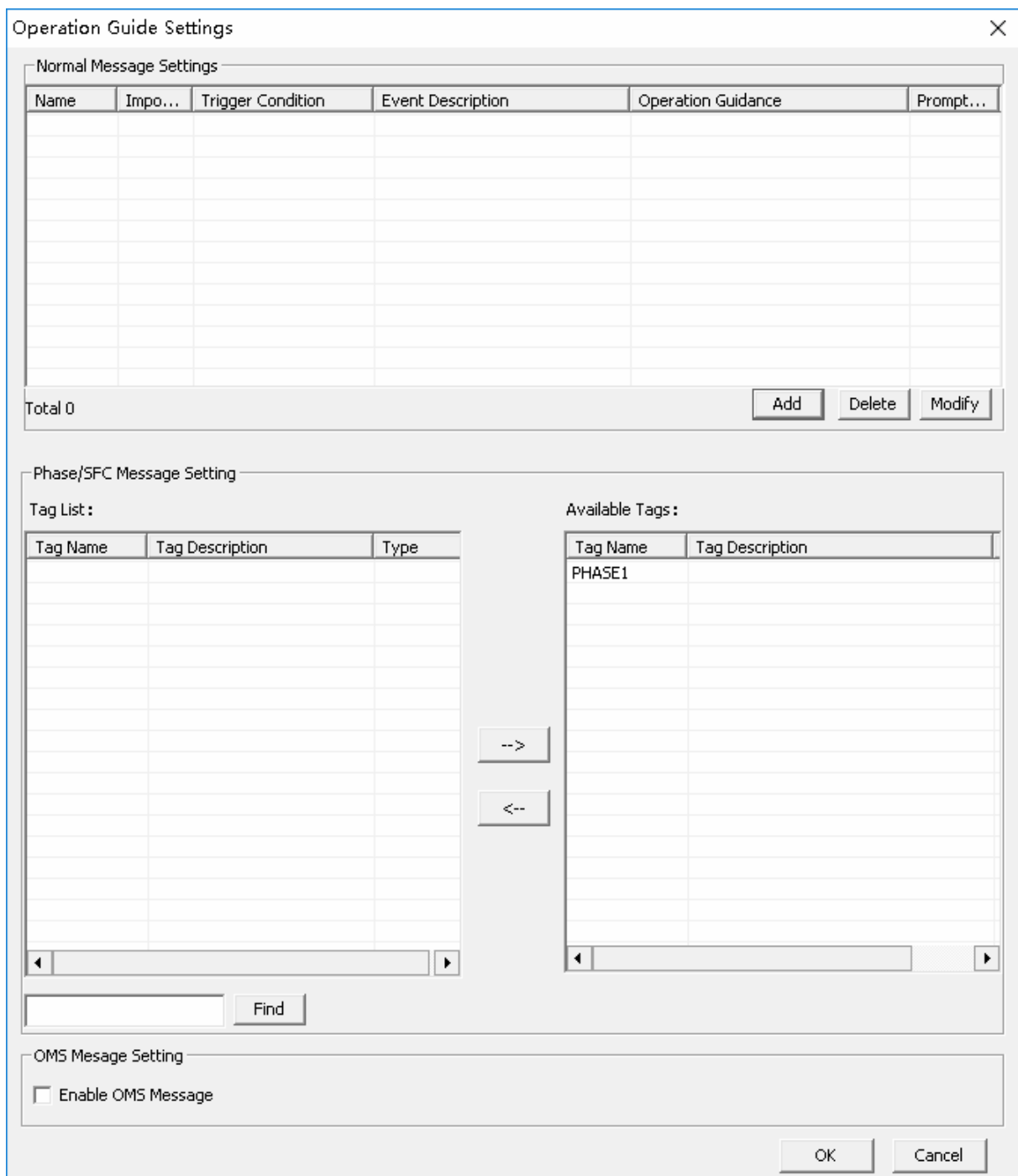
High-performanceHMI supports the operation guide that configures normal messages as per message type or phase messages.

4.18.1 Start Configuration

The information of certain event and prompt information should be set in Supervision Configuration Software.

Operation guide configuration will be added automatically when adding operation team. Users can add it manually by right clicking “Unit 1” and selecting “Add Operation guide” in the right-click menu, or select **Operation/Add Operation guide** in menu bar.

Double click “Operation guide”, and the Operation Guide Settings Window will pop up as shown follows:



The screenshot shows the 'Operation Guide Settings' window. It has a title bar with a close button (X). The window is divided into three main sections: 'Normal Message Settings', 'Phase/SFC Message Setting', and 'OMS Message Setting'.

Normal Message Settings: This section contains a table with the following headers: Name, Impo..., Trigger Condition, Event Description, Operation Guidance, and Prompt... The table is currently empty. Below the table, it says 'Total 0'. To the right of the table are three buttons: 'Add', 'Delete', and 'Modify'.

Phase/SFC Message Setting: This section is divided into two main areas. On the left, under 'Tag List:', there is a table with headers 'Tag Name', 'Tag Description', and 'Type'. This table is empty. On the right, under 'Available Tags:', there is a table with headers 'Tag Name' and 'Tag Description'. This table contains one entry: 'PHASE1'. Between these two tables are two buttons: '-->' and '<--'. Below these tables are two scroll bars. At the bottom of this section is a 'Find' button.

OMS Message Setting: This section contains a checkbox labeled 'Enable OMS Message', which is currently unchecked.

At the bottom right of the window are two buttons: 'OK' and 'Cancel'.

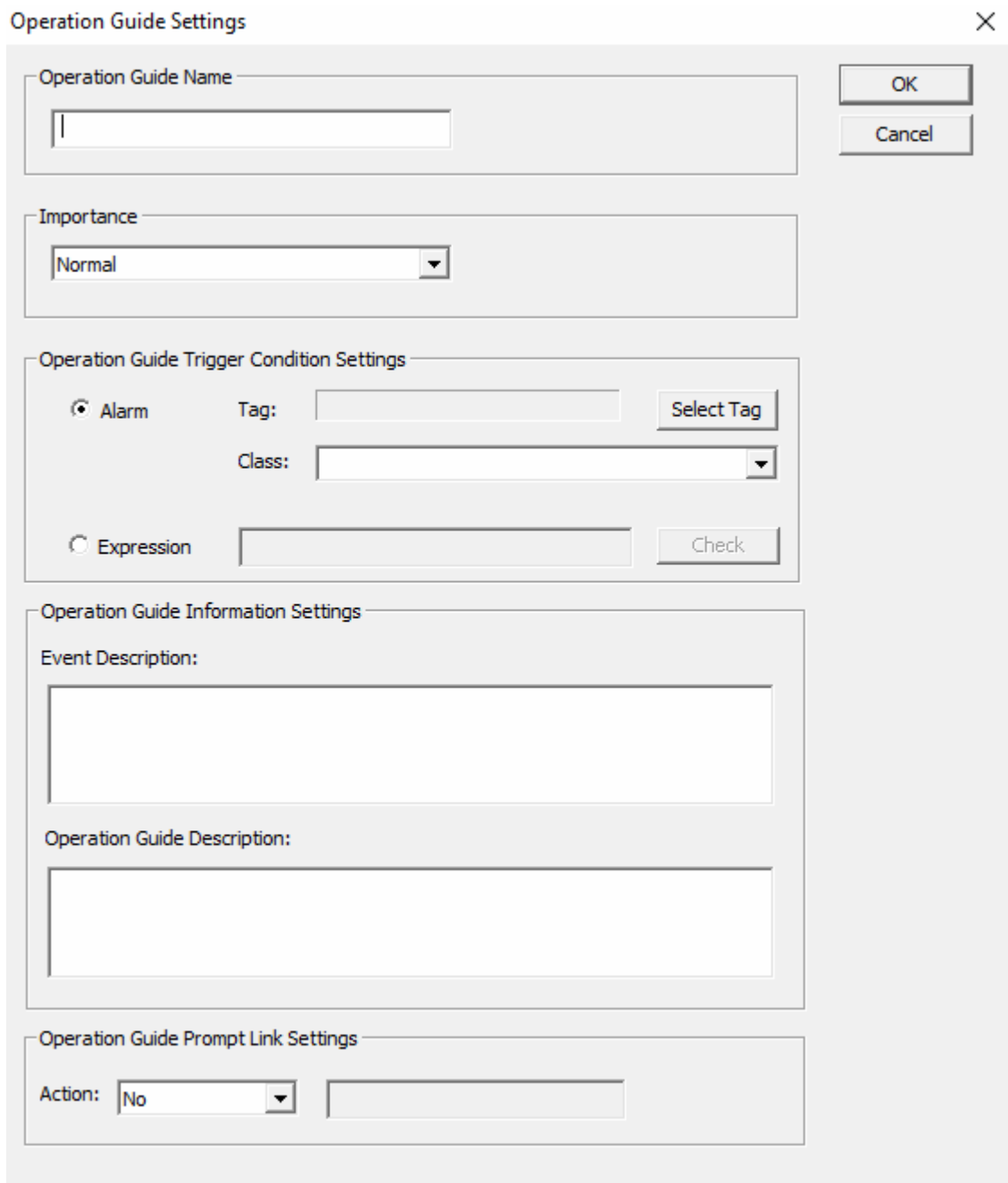
Figure 4-105 Operation guide Setting Window

4.18.2 Configuring Operation Instruction of Normal Messages

Normal messages in High-performanceHMI refer to those generated as specified alarms occur or specified expressions are met.

Configuration Steps

- 1) Click “Add” in the window shown in Figure 4-105, and a dialog box will pop up as shown in Figure 4-106.



The dialog box is titled "Operation Guide Settings" and has a close button (X) in the top right corner. It contains several sections for configuring an operation guide:

- Operation Guide Name:** A text input field with a cursor.
- Importance:** A dropdown menu currently showing "Normal".
- Operation Guide Trigger Condition Settings:**
 - ☒ **Alarm:** Includes a "Tag:" label, a text input field, a "Select Tag" button, a "Class:" label, and a dropdown menu.
 - ☐ **Expression:** Includes a text input field and a "Check" button.
- Operation Guide Information Settings:**
 - Event Description:** A large text area.
 - Operation Guide Description:** A large text area.
- Operation Guide Prompt Link Settings:**
 - Action:** A dropdown menu currently showing "No" and a text input field.

Buttons "OK" and "Cancel" are located in the top right corner of the dialog box.

Figure 4-106 Add Operation guide

- 2) Configure the operation guide of normal messages as per the table below.

Configuration Item		Illustration
Operation guide name		The name of the operation guide
Importance		Types are divided into normal and critical. In monitoring, important operation guide is set red (before acknowledgement) while normal operation guide is set light yellow (before acknowledgement).
Triggering condition		The condition for triggering this operation guide Alarm: set tags and alarm types Expression: tag expression. It supports compound expression. It supports compound expression such as AI00020000>40 and AI00020001<90; supports alarm expression, such AI00020000.HH which means it will be triggered when the tag generates HH alarm. Operators the expression support in the operation guide are shown in Table 4-5.
Operation guide information	Event description	It is the text description of the current event. When the triggering condition is met, it will be displayed in the monitoring. The maximum length is 200 characters.
	Message description	When the current event occurs, it is the text description of operation guide. When the triggering condition is met, it will be displayed in the monitoring. The maximum length is 200 characters.
Operation guide reminding link		When event occurs and then the operation guide is triggered, it is the link operations, including opening tag panel, opening graphics and alarm procedures. When "alarm procedure" is selected, tag-related alarm procedures should be added by "domain configuration > procedures", otherwise it will prompt "the selected procedures don't exist". For configuration methods, refer to Alarm Help. In monitoring, right click this operation guide, and you can open the corresponding links in the right-click menu.

- Click "OK" to complete the configuration of the operation guide of normal messages.

Table 4-5 Operator

Operator	AND	And
	OR	Or
	NOT	Not
	<	Less than
	>	More than
	<=	Be equal or less than
	>=	Be equal or more than
	<>	Unequal
	=	Equal

	AND	And
	+	Plus
	-	Minus
	*	Multiply
	/	Divide
	MOD	Mod
	^	Power
	(Left parenthesis
)	Right parenthesis

4.18.3 Configure Operation Instruction of Phase/SFC Messages

If messages are applied to the step or the transient in Phase function block, Phase messages can be added to the operation guide and the message prompt will pop up in monitoring. Similarly, after applying the message in SFCEX program, you can add SFC message in operation guide to get the related information of SFCEX program in monitoring.

Take the Phase message as example to explain the operation guide of Phase and SFCEX program message. For the detailed configuration and application guide of Phase and SFCEX message, please refer to the *Phase Class Function Block User Manual* and *SFCEX Program User Manual*.

1. In the "Phase' message configuration" combo box shown in Figure 4-107, select the tag that needs to be added from the tag of the Phase function block in the "Available Tags" state on the right.
2. After selecting the tag, click "<--" to add the selected tag to the Phase message list, as shown in the figure below.

The dialog box is titled "Operation Guide Settings" and contains three main sections:

- Normal Message Settings:** A table with columns: Name, Impo..., Trigger Condition, Event Description, Operation Guidance, and Prompt... It contains one row with Name 'a', Impo... 'Normal', Trigger Condition 'Expression_AI0002...', Event Description 'ADA', Operation Guidance 'AFDAD FAD A', and Prompt... empty. Below the table is a "Total 1" label and buttons for "Add", "Delete", and "Modify".
- Phase/SFC Message Setting:** This section contains two tables:
 - Tag List:** A table with columns: Tag Name, Tag Description, and Type. It contains one row with Tag Name 'TAG_PHASE', Tag Description empty, and Type 'Phase'.
 - Available Tags:** A table with columns: Tag Name and Tag Description. It contains one row with Tag Name 'SFCEX' and Tag Description empty, which is highlighted in blue.
 Between the two tables are two buttons: "-->" and "<--". Below the tables are two scroll bars and a "Find" button.
- OMS Message Setting:** A section with a checkbox labeled "Enable OMS Message".

At the bottom right of the dialog box are "OK" and "Cancel" buttons.

Figure 4-107 Add phase tags in the operation instruction

4.18.4 Configure Whether to Enable OMS Message

When control system and OMS system works together for production management, you can monitor OMS message in High-performanceHMI real-time monitoring software.

You can select whether to display OMS message in operation instructions in the interface shown in Figure 4-107:

- Check "Enable OMS message", after the integrated OMS of the control system generating instructions, OMS message will be displayed in the instructions of High-performanceHMI real-time monitoring system.
- If "Enable OMS message" is not checked, then OMS message will not be displayed in instructions of High-performanceHMI real-time monitoring system.

Section 5 Domain Configuration

5.1 Domain Variable Configuration

VFVarCfg is one of the important parts of High-performanceHMI configuration software package, which supports third party devices and OPC data input through the I/O driver. Simulation variables (Memory driver) and extend configuration variables can also be configured by domain variable configuration.

Double-click "Domain Variable" in the configuration tree of the VFHMIConfig interface, and the interface of the domain variable configuration will pop up, as shown in the Figure 5-1.

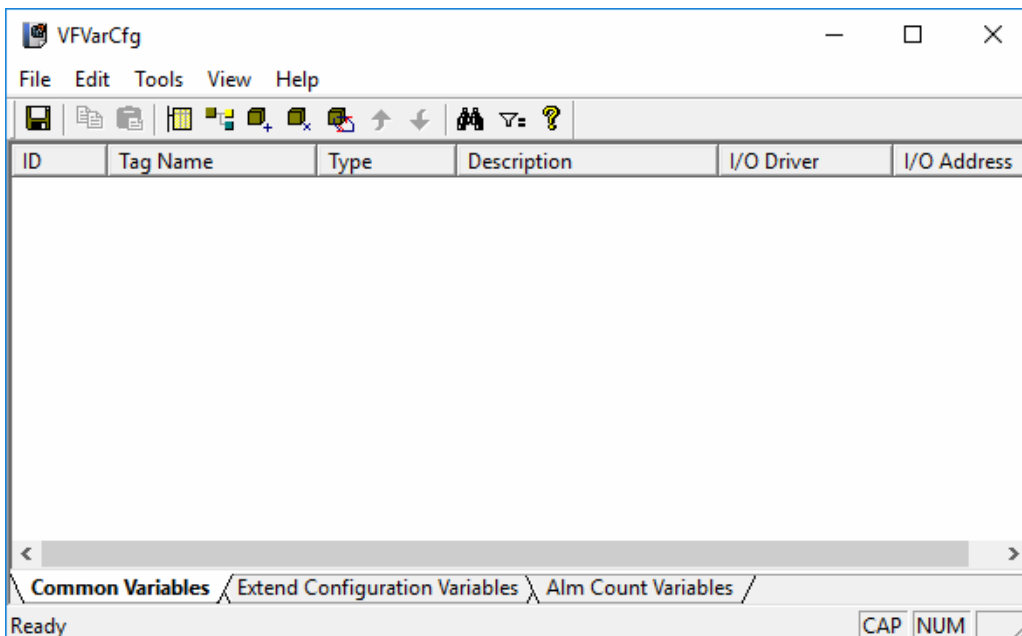


Figure 5-1 Interface of VFVarCfg

The interface of VFVarCfg includes "Common Variables" page, and "Extend Configuration Variables" page, etc. The common variable is used to input tag information and simulation variables of a third party device, and the extend configuration variable is used to input variables after extending configuration.

Please configure the drive programs of corresponding third party devices before the general variable is used.



Tip:

Domain variable tag created in operation domain configuration, can be referenced by the operation domain and applied in other HMI configuration, such as graphics and trend configuration.

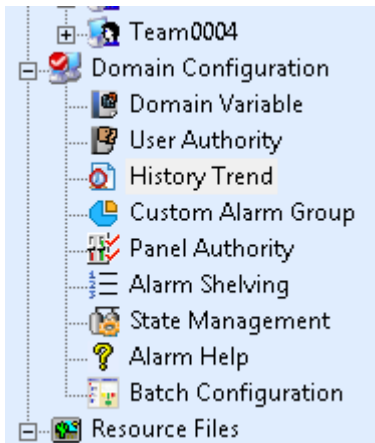


Figure 5-3 Function Item of History Trend

Open the VFHisCfg and the main interface is as shown in Figure 5-4.

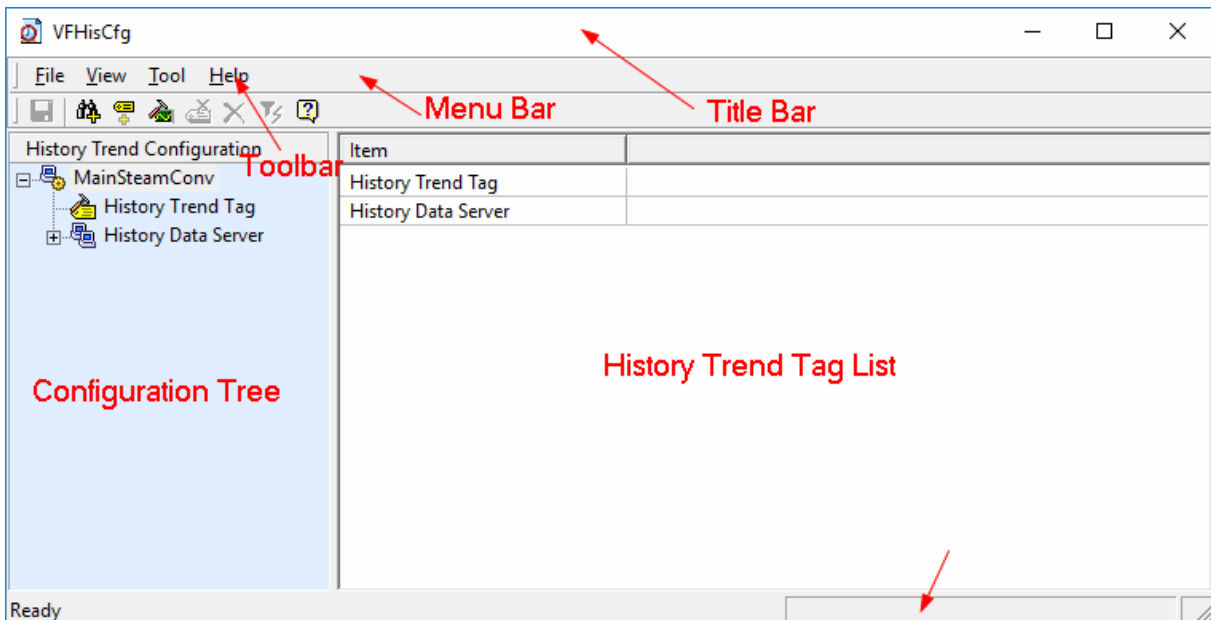


Figure 5-4 Interface of "History Trend Configuration"

- Title Bar: Display the filename of history trend configuration.
- Menu Bar: Display menu items after induction and classification, including file, view, tool and help. Each item has its pull-down menu.
- Toolbar: Display common menu commands with icons. When users put the mouse on the icon in the toolbar, a tool tip will appear.
- Status Bar: The status bar is at the bottom of the edit interface. Prompt of operation is displayed on the left of the status bar and tag amount of trend database is displayed on the right.
- Configuration Tree: Labeled by data group history database is saved according to region mode. Labels of different regions can be viewed respectively by clicking items in the directory tree.
- History Trend tag List: Display history trend tag.

5.3.2 Menu function


The menu bar lists main menu items of history trend configuration, including file, view, tool and help.

Table 5-1 Menu Schedule of History Trend Configuration Software

Menu	Sub-menu	Function Instruction
File (F)	Save Ctrl+S	Save the trend configuration file
	Exit (X)	Exit the history trend configuration software.
View (v)	Toolbar (T)	Tick off to show the toolbar on the edit interface
	Status Bar (S)	Tick off to show the status bar on the edit interface.
Tool (t)	Trend Database Settings (T)	Set the basic trend database.
	Add trend Database tag (A)	Add tags into the trend library
	Delete Trend Database Tag (D)	Delete the selected tags in the trend library
	Remove Invalid Tag (R)	Remove invalid tags in the trend database
	Add PID Tag to Trend Database (P)	Add PID tags to the trend database
	Tag Filters (F)	Find tags in the trend database
	Calculate the hard disk loss	View hard disk occupation situation of historical data server
Help (H)	About (A)	Software version instruction

5.3.3 Configuration Instruction

History trend tag configuration

Click the icon  in the toolbar or click the menu **Tool/Add Trends Database Tag** or right-click "History Trend Tag" Select "Add Trend Database Tag" in the pop-up right-click menu, and the tag selector will pop up, as shown in Figure 5-5.

History Trend Configuration

Filter

Operation Domain: OA00120 - MainSteamCc Tag Name Filter:

Control Domain: Combustion Tag Description Filter:

Control Station: All Visible Control Station ☒ Trend Tag ☒ Non-trend Tag

Tag Group: All Tag Group ☐ Case Sensitive Search >>

System Type: ECS-700 Clear Filter Condition Soft Keyboard

Tag Type: All Types

FunctionBlock Type: All Types

Tag Name	Tag Description	Tag Type	Field	Field Description
AO00020164	Standby	Analog Output	REVSCL	Run Fault
AO00020165	Standby	Analog Output	HHSUP	HH Alarm Suppress
AO00020166	Standby	Analog Output	HH_B	HH Limit Alarm
AO00020167	Standby	Analog Output	LLPRI	LL Alarm Priority
DO00020000	Standby	Digital Output	LPRI	L Alarm Priority
ARR_OUT_BOOL	Standby	Custom Digital	LLL_B	LLL Limit Alarm
ARR_OUT	Standby	Custom Digital	LL_B	LL Limit Alarm
A_FT_200	Standby	Analog Input	ACTAPRI	Highest Priority of
A_FT_202	Standby	Analog Input	DPVSUP	DPV Alarm Suppress
A_FT_203	Standby	Analog Input	SUP	Tag Alarm Suppress
A_FT_206	Standby	Analog Input	HHHSUP	HHH Alarm Suppress
A_FT_207	Standby	Analog Input	LLLSUP	LLL Alarm Suppress
A_FT_209	Standby	Analog Input	HPRI	H Alarm Priority
A_FT_211	Standby	Analog Input	FRRPRI	FRR Alarm Priority

Tag Number: 320 Reload

Period: 1 s Compress Type: High Compress OK Cancel

Figure 5-5 Interface of Tag selector

Sampling period and compress type can both be set in the tag selector. After selecting several tags in the tag selector, click "OK" to add the selected tags into the trend database.

Only tags of same type can be added simultaneously. When several tags of different types are selected and added, a message box of "Please select field!" will pop up.

Add PID tags to trend database

When select **Tool/Add PID tags into trend database**, a message box of "Succeed to add PID tags" will pop up and all PID tags are added to the trend database. If there is no PID tag, a message box of "No PID tag" will pop up.



Tip:

SV, MV, PV of modules PID, PIDEK and PIDEK are added to trend database.

Delete trend Database tag

Select a tag group in the directory tree on the left and select one or several history trend tags in the historical trend tag list on the right. When click the menu **Tool/Delete Trend Database tag** or right-click, the menu will pop up. Click the item "Delete from trend database" and click **OK** in the pop-up dialog box. The selected tags will be deleted from the trend database.

Tag property

Right-click a historical trend tag and select "Properties Settings" in the right-click menu and a dialog box will pop up, as shown in the Figure 5-6.

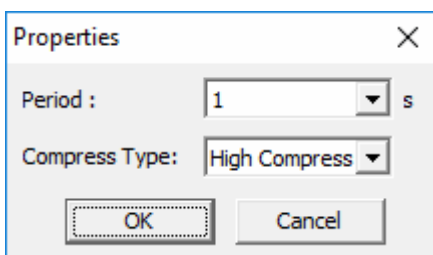


Figure 5-6 Properties Settings

- Record period: 1s, 2s, 3s, 5s, 10s, 15s, 20s, 30s.
- Compress types includes High High Compress, High Compress and Low Compress. The High High Compress is compress to DOUBLE data without damage and large disk space is required.

The high compress is compress without damage, but of low compress ratio, yet high data precision and large disk space is required.

The low compress is compress with damage, but of high compress ratio, yet low data precision and relatively small disk span is required comparing to high precision compress mode.

History data server configuration

The historical data server is used to store the trend data of the historical trend tag.

A historical data server can select up to 3 hosts. When two or more hosts are selected as a historical data server, the remaining hosts are redundantly configured when recording historical trends. One or more historical data servers can be added to an operation domain.

**Tip:**

Global monitoring station for configuration switch cannot be history trend server.

- 1) Right-click "History Data Server" in the configuration tree and select "Add History Data Server", a dialog box of historical data server will pop up, as shown in Figure 5-7.

Operation

Station Name: History Data Server 0000

Operation Node (IP)

☐ Server_0_129(11.140)

☐ Operation Node_0_129(0.129)

Data Reserved in Database: 366 day(s)(0 represents not to delete)

OK Cancel

Figure 5-7 Interface of "Historical Data Server Configuration"

- 2) When operation node IP is selected, the operation node is configured as the historical data server of the operation domain.
- 3) In "Data Reserved in Database", configure the maximum storage time for the currently configured operation node to save historical data, ranging from 0 to 100000 days, where 0 means not to delete the historical data in the currently configured operation node.

Select one of the added history data servers and users can configure the history trend tags that are recorded by the history data server. When the check-box in front of the tag group is selected, the tag is configured as shown in Figure 5-8.

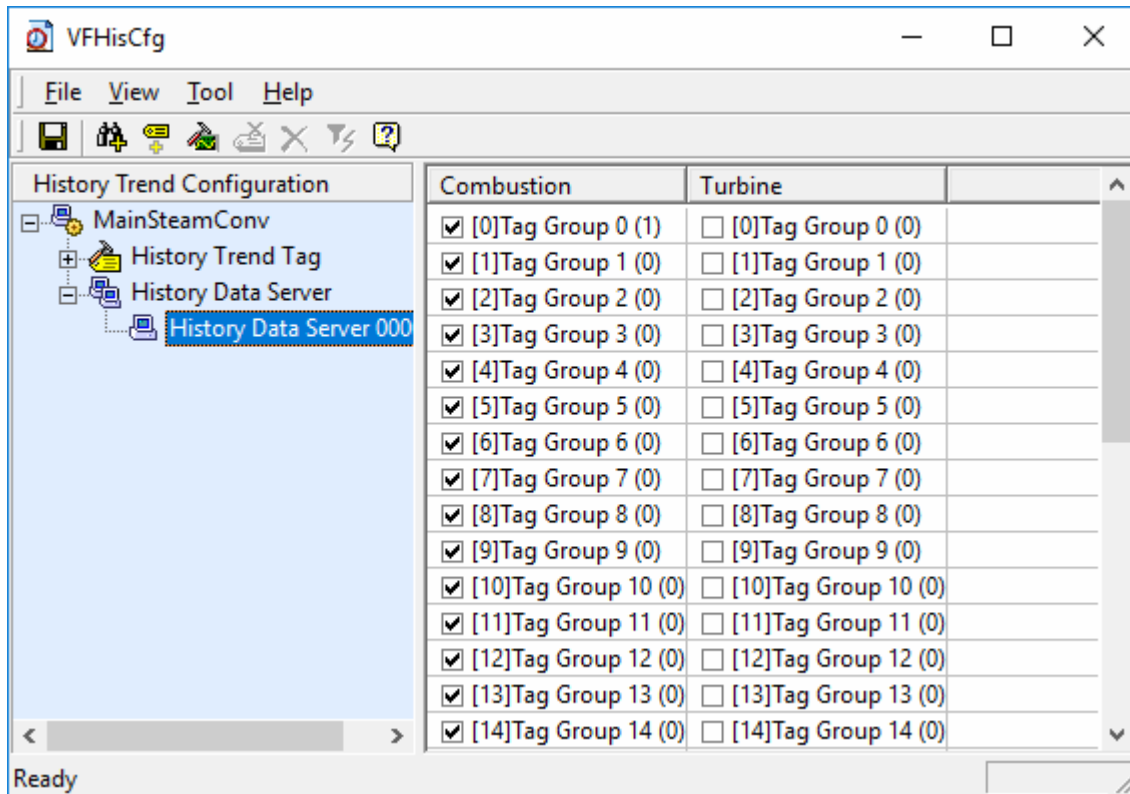


Figure 5-8 Tag Group Configuration of History Data Server

Click the name, and a message box of "Select All, Clear All, Invert Selection" will pop up, as shown in the Figure 5-9.

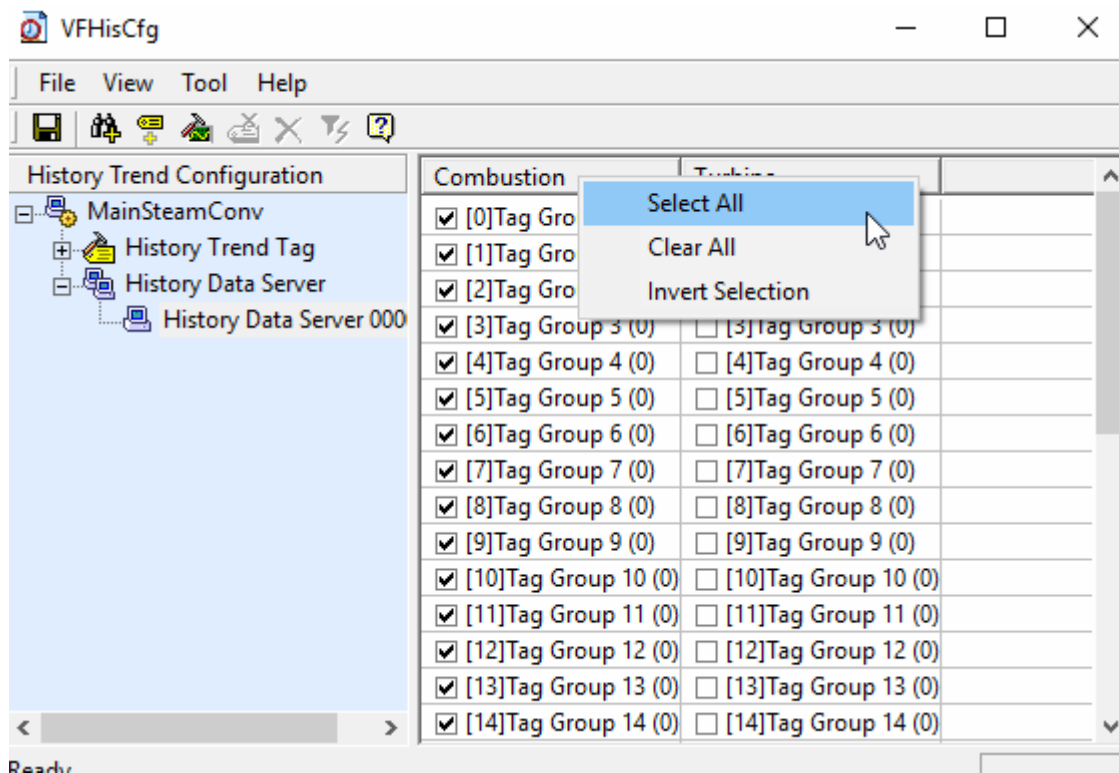


Figure 5-9 Menu of "Select All, Clear All, and Invert Selection"

"Select All": All tag groups of the domain are selected.

"Clear All": None of tag groups of the domain are selected.

"Invert selection": Toggle the selected tag groups and the unselected tag groups.



Tip:

When several history data servers are configured in a same operation domain, a tag group selected in this history data server cannot be selected in another.

Trend database setting

Click the icon  in the toolbar or click the menu **Tool/Trend Database Setting**, the dialog box of setting will pop up, as shown in Figure 5-10. In "File Recording Time", configure how long a single file records historical data.

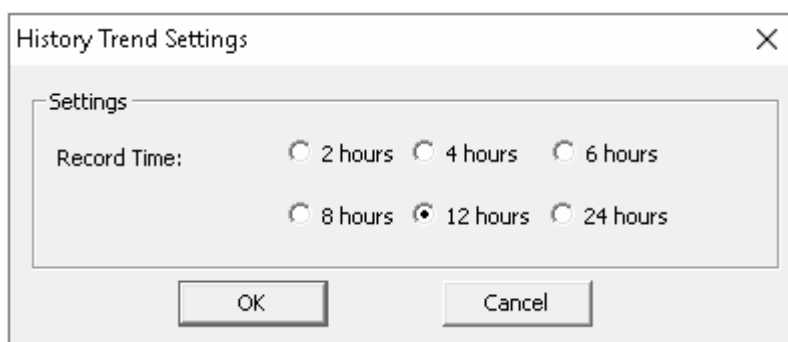



Figure 5-10 Interface of "History Data Setting"

- File record time: Time of history data recorded by a file.
- Conservation time of data in the database: Set conservation time of the data file and files over time limit will be deleted.
- When the file recording time is configured as "24 hours", the maximum number of collection points is limited to 8000 points.
- When the file recording time is configured as "12 hours", the maximum number of collection points is limited to 16000 points.
- When the file recording time is set to other times, the maximum number of collection points is limited to 20000 points.

Remove invalid tags

Click the icon  in the toolbar or click the menu **Tool/Remove Invalid Tags**, and a dialog box will pop up, as shown in the Figure 5-11.

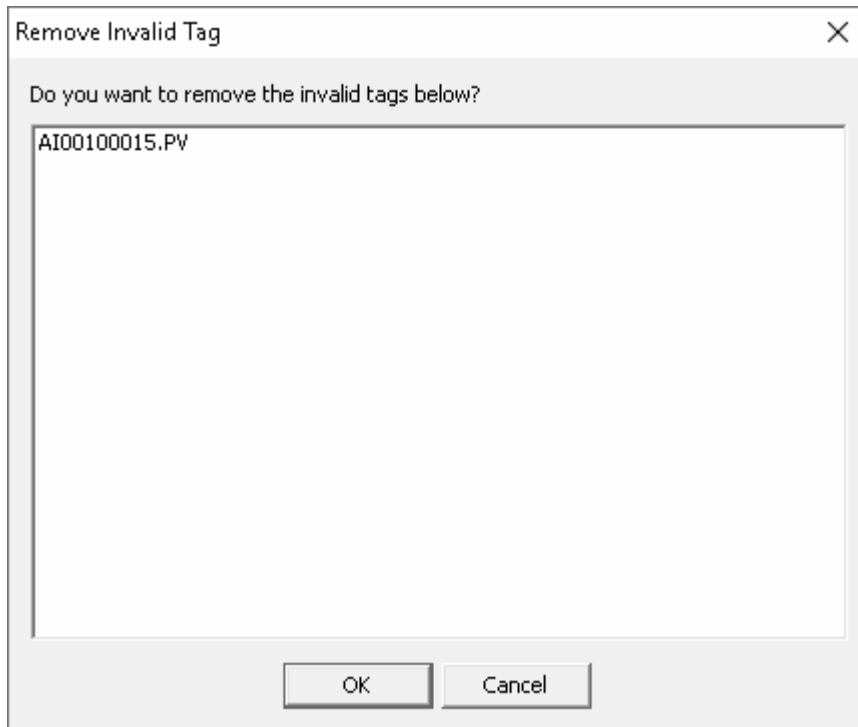


Figure 5-11 Remove Invalid Tags

Click the button "OK" to delete all invalid tags in the database.

If there are invalid tags in the history trend tags, a dialogue box of whether to remove invalid tags pops up when the software exits.



Tip:

- Tags which existed in the tag list before and have been configured in the history trend tag configuration and were later deleted in the tag list are invalid tags.
 - DESC tag in custom tag is invalid tag.
 - Tags configured in the history trend tag configuration will not be removed though deleted in the tag list. The operation of removing invalid tags is required to remove them manually.
-

5.3.4 Tag Filter

Select "History Trend Tag" or the name of the control domain under it, or a data group of control domain, and select "Tag Filter" in the right-click menu or "Tool/Tag Filter], and a dialog box will pop up, as shown in the Figure 5-12.

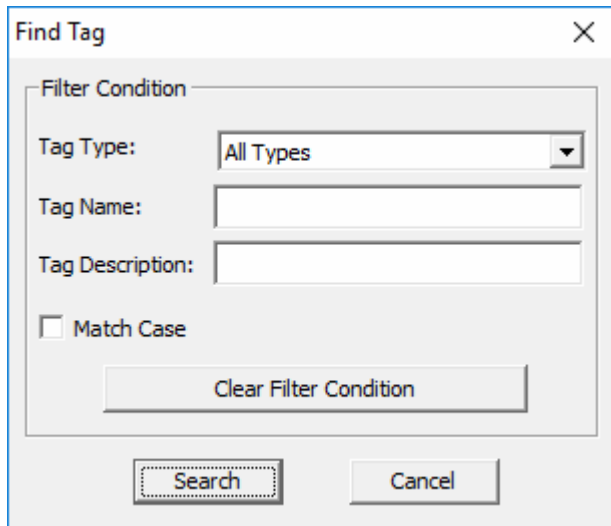



Figure 5-12 Dialog box of "Find tag"

Tags can be searched by filter conditions of tag type, tag name, tag description and match case. Support fuzzy matching without "*" and "?". Previous filter condition settings can be cleared by clicking the button "Clear Filter Condition".

For example, to search for A_FT_203, users can select "All Types" in "Tag Type" and input "A_FT_203" in "Tag Name" in the dialogue box of "Find Tag"; other conditions are default. Click the button "Find". Tags that match the filter conditions will be displayed in trend tag list. A yellow label will appear on the icon and the filter/cancel filter button  will be concave-down, as shown in the Figure 5-13.

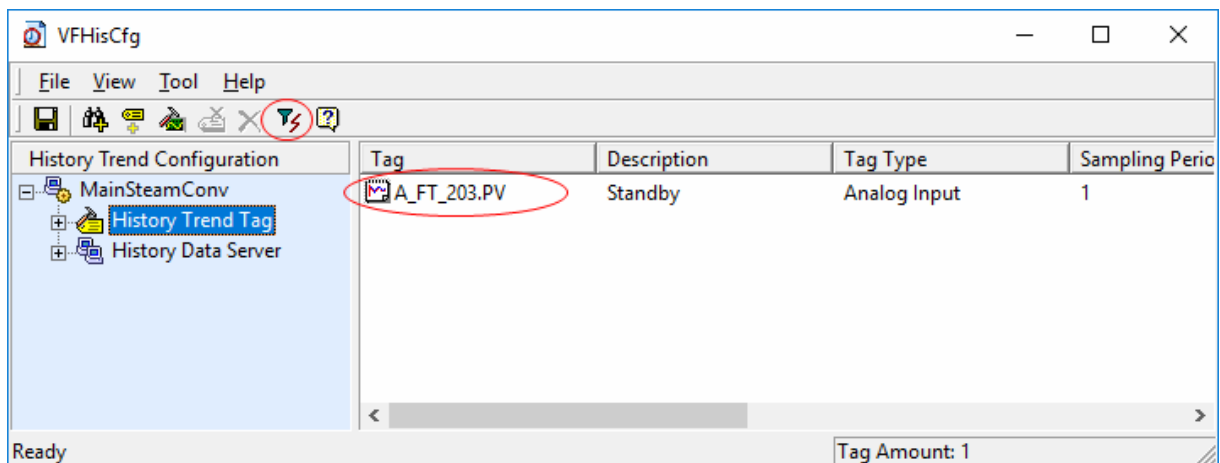



Figure 5-13 Result of tag search

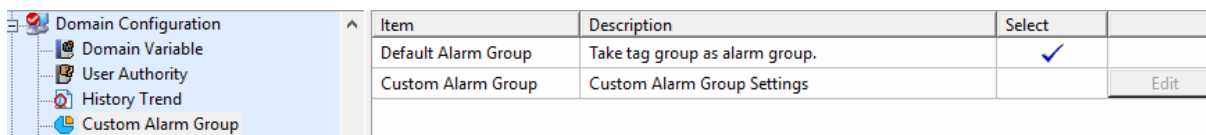


Tip:

Before tags are searched the next time, filter must be canceled first, i.e., restore the Filter/Cancel Filter button  to be heave.

5.4 Custom Alarm Group

Users can set alarm group and alarm region by custom alarm group configuration. Alarm group and alarm region are consistent with tag group and tag region by default. Alarm group can be separated from tag group by custom alarm group setting. Switch of default alarm group and custom alarm group can be set in custom alarm group, as shown in the Figure 5-15.

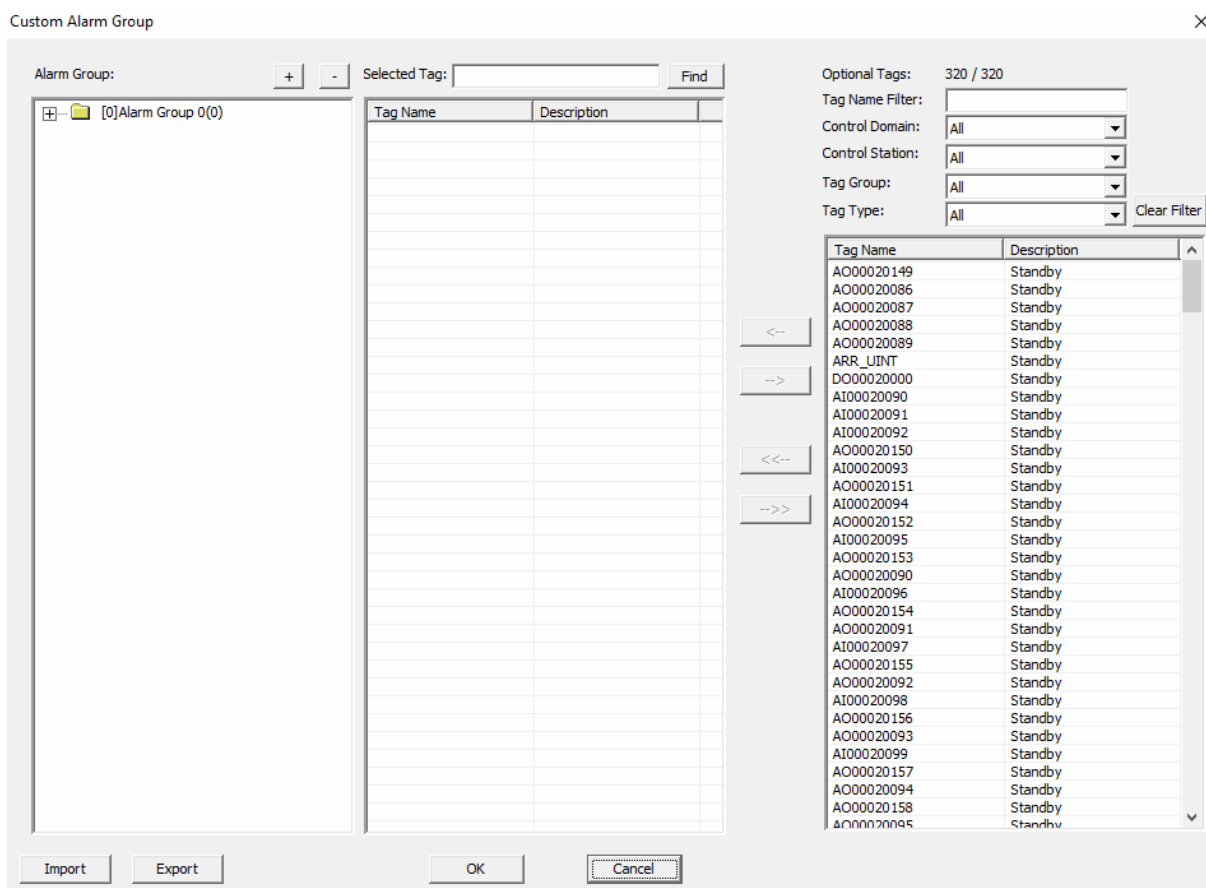


Item	Description	Select	
Default Alarm Group	Take tag group as alarm group.	<input checked="" type="checkbox"/>	
Custom Alarm Group	Custom Alarm Group Settings	<input type="checkbox"/>	Edit

Figure 5-14 Switch default/ custom alarm group

Click the “Select” of custom alarm group, to pop up the confirm dialog. Set the default alarm group as custom alarm group after confirmed.

Click “Edit” to popup the settings interface, as shown below.



Custom Alarm Group

Alarm Group: [0] Alarm Group 0(0)

Selected Tag: Find

Optional Tags: 320 / 320

Tag Name Filter:

Control Domain: All

Control Station: All

Tag Group: All

Tag Type: All Clear Filter

Tag Name	Description
AO00020149	Standby
AO00020086	Standby
AO00020087	Standby
AO00020088	Standby
AO00020089	Standby
ARR_LIINT	Standby
DO00020000	Standby
AI00020090	Standby
AI00020091	Standby
AI00020092	Standby
AO00020150	Standby
AI00020093	Standby
AO00020151	Standby
AI00020094	Standby
AO00020152	Standby
AI00020095	Standby
AO00020153	Standby
AO00020090	Standby
AI00020096	Standby
AO00020154	Standby
AO00020091	Standby
AI00020097	Standby
AO00020155	Standby
AO00020092	Standby
AI00020098	Standby
AO00020156	Standby
AO00020093	Standby
AI00020099	Standby
AO00020157	Standby
AO00020094	Standby
AO00020158	Standby
AO00020095	Standby

Import Export OK Cancel

Figure 5-15 Interface of "Alarm Group Setting"


- Use tag group as alarm group(default)

The item is selected by default and tag group are consistent with alarm group.

- Use custom alarm group settings

When the item is selected, users can define alarm group and region, and the part under "Custom Alarm Group Settings" becomes available.

5.4.1 Add Alarm Group

Right-click in the blank area under "Alarm Group", and select "Add Alarm Group" in the pop-up menu or click the button , users can add an alarm group in alarm group part, as shown in the Figure 5-16.

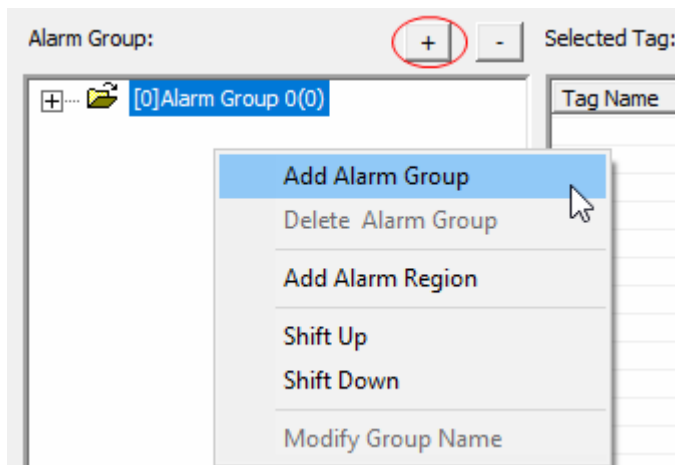



Figure 5-16 Add Alarm Group

The name of the new alarm group cannot be modified. The maximum number of the new alarm groups is 200, and a prompt will pop up if users try to add more. The alarm region name and alarm group name consist both of 32 characters, which cannot be empty. The alarm group name cannot repeat with alarm region name, while it can repeat with another group name.

5.4.2 Delete alarm group

Choose an existing alarm group, and select "Delete Alarm Group" in the right-click menu or click the button .

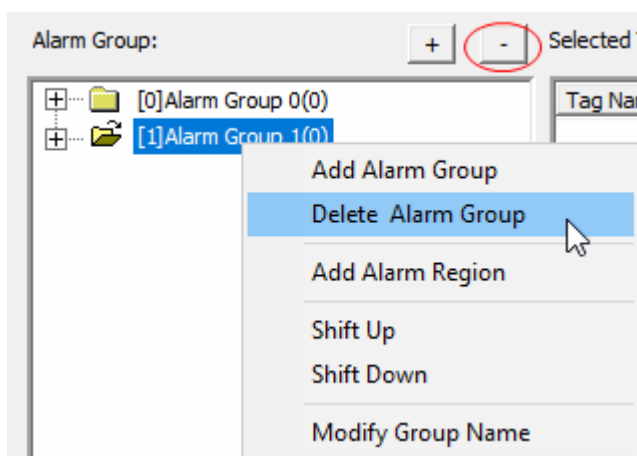


Figure 5-17 Delete Custom Alarm Group

5.4.3 Filter of optional tags

The type of optional tags can be selected in the pull-down list, filter conditions including tag name,

control domain, control station, tag group and tag type. Tag name box is empty as default, while other boxes are set as all as default, user can select from the pull-down list. as shown in Figure 5-18. "All Types" is selected by default. When a type is selected, only tags of this type are displayed under "Optional Tags".

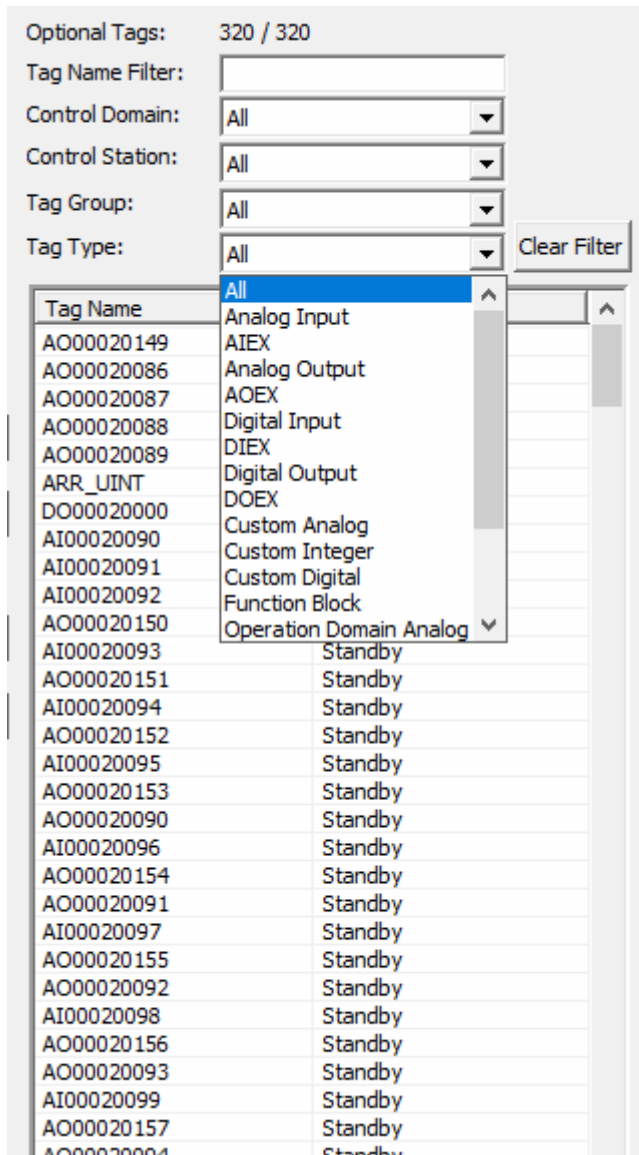


Figure 5-18 Select Types of Optional Tags

5.4.4 Add tags in the custom alarm group

Steps:


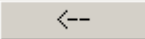

- Click the icon  in front of a group and 0~199 alarm regions will be expanded.
 1. Select a region.
 2. Select a tag under "Optional Tags" (press the key "shift" or "Ctrl" to select several tags at a time).
 3. When click the button of left shift of single tag , the tag displayed under "Optional tags" will be shifted under "Current Tags in Alarm Group", as shown in

Figure 5-19. If the button of left shift of all tags  is selected, all tags displayed under "Optional Tags" will be shifted under "Current tag group", i.e., all tags displayed under "Optional Tags" belong to the selected regions of the current group.

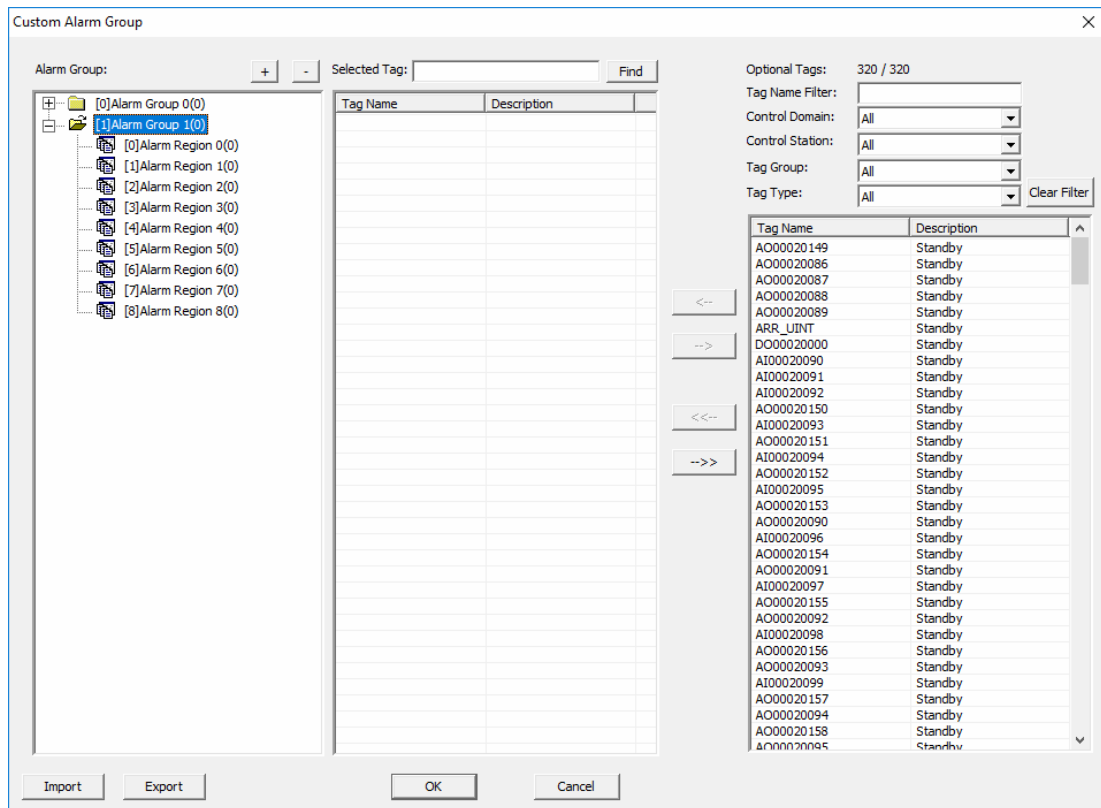


Figure 5-19 Add Tags in the Custom Alarm Groups






Tips:

1. Click the button of left shift of all types, and all tags are shifted under "Current Tag Group" whether any of the tags is selected under "Optional tags" or not.
2. Click the button of left shift of all types, and all tags displayed under "Optional Tags" are left shifted. For instance, if the current type is analog, all analog tags displayed under "Optional tags" will be left shifted. Other types of tags will not.

5.4.5 Remove tags in the custom alarm group


Steps:

- Click the button  in front of a group and 0~199 alarm regions will be expanded.
 1. Select a region.
 2. Select a tag under the current group tags.
 3. Double-click the tag, or click the button of right shift , or right-click one or several tags and select "Select out Alarm Region". All tags can be removed in the

region by clicking the button of right shift of all types . And tags in the region will be removed back under "Optional tags."



Tip:

When click the button of right shift of all types , tags shifted under "Optional Tags" are tags of the region, not of the group. These tags are irrelevant with tags in other regions of the group.

5.4.6 Search selected tag quickly

Input key words in the search box of selected tag and click "Find" to search quickly.

5.4.7 Import and Export

Custom alarm group is supported to be imported/exported as CSV file, and reused procedure of custom alarm group.

Import

1. Click "Import" to pop up the prompt of whether replace the current configuration, select "Yes" to continue, or select "No" to cancel.
2. Select the csv file from the pop up file selection dialog, the default import file name is "UserAlarmGroupSetting.csv", click "cancel" to stop importing.
3. Check the data validity after importing csv file. If the data is abnormal, prompt the column and row number of fault, and stop the importing.
4. If data check passed, delete the old configuration and import the new.
5. A prompt of importing completed will pop up.

Note: format of data imported is shown below:

Table 5-2 Import data format

Instruction	Alarm group setting							
Instruction	Group Name	Group No			Group Name	Group No		
Alarm Group Name (Group ID)	General Pressure Tower	0			Reduced Pressure Tower	1		
Alarm Region Name(Custom)义)	No.1 Tower	No.2 Tower	No.3 Tower	No.4 Tower	No.6Tower	No.7 Tower	No.8 Tower	No.9 Tower
Region ID	0	1	3	4	0	2	3	4

Instruction	Alarm group setting							
Tags	AI00002 01	DI00002 01	AO0000 202	DO0000 201	AI00002 01	DI00002 01	AO0 0002 02	DO00 00201
	AI00002 02	DI00002 02		DO0000 202	AI00002 02	DI00002 02		DO00 00202
	AI00002 03	DI00002 03		DO0000 203	AI00002 03	DI00002 03		DO00 00203
	AI00002 04	DI00002 04		DO0000 204	AI00002 04	DI00002 04		DO00 00204

Export

- File save dialog will pop up when exporting, select the path and export.
- If file with the same name existed, a prompt of whether replace will pop up.
- The default export name is "UserAlarmGroupSetting.csv".
- A prompt of export completed will pop up.

5.5 Custom System Alarm

In default state, system alarm only includes hard equipment fault directly related to the control system, such as clock fault of controller, system network fault and etc. When status of the control system is related to some tags, you can define these tags as system alarm tags. After definition, the alarm status of these tags will be displayed in system alarm list.

Steps

You can add custom system alarm through:

1. Enter the configuration interface

Double-click "Domain Configuration > Custom System Alarm" in configuration tree to pop up the "Custom system alarm settings" configuration dialog box.

2. Add and configure tag

Click "Add" button in "Custom system alarm settings" dialog box to add a new line. In the new line, configure tag, trigger condition of custom alarm, alarm description and alarm level.

Table 5-3 Illustration of custom system alarm

Configuration Item	Illustration
--------------------	--------------

Configuration Item	Illustration
Alarm trigger tag	<ul style="list-style-type: none"> ● Only tags of local domain supported, and should be specified as BOOL fields of tag, such as "DI1.PV". ● Alarm trigger tag only supports multicast parameter, the detailed information of multicast parameter please refer to the IO Tag User Manual. ● A same tag supports up to two alarm, trigger condition of an alarm is true, another is false, it cannot be both true or false.
Alarm trigger conditions	<ul style="list-style-type: none"> ● True, if value of alarm trigger tag= ON, alarm triggers. ● False, if value of alarm trigger=OFF, alarm triggers.
Alarm description	Configure the description information of this alarm, alarm description will be displayed in the "Description" column of system alarm list.
Alarm level	Configure the level of this alarm, system supports level 1 to 4.

3. Confirm addition, and incrementally release

Configure all the custom system alarm tags, and click "Confirm" to save the configuration.

After incremental release, the custom system alarm configured takes effect.



Tips:

The alarm dead band of custom system alarm is 2: the alarm is generated when the tag value associated with two consecutive period is equal to the condition; the alarm is removed when the tag value associated with two consecutive period is not equal to the condition.

Monitor instruction

During monitoring, custom system alarms follow the following rules:

- System alarm shielding is not valid for custom system alarm

System alarm shielding is for the control station, while custom system alarm is not related to the control station, thus shielding function of system alarm is not valid for custom system alarm.

- When the trigger tag of custom alarm does not exist, the corresponding custom system alarm will not be generated
- When the quality code of trigger tag of custom alarm is BAD, the corresponding alarm will not be generated.

- If the trigger tag of custom alarm changes from exist to non-exist, the corresponding alarm is automatically removed.
- If the tag is in BAD condition, the custom system alarm generated remains intact. After monitor restarting, the corresponding alarm will be removed.

5.6 Panel Authority Configuration

Panel authority configuration can change the tune panel authority and kinds of parameters of global function block, system function block and Phase function block.

Panel authority configuration includes:

- OMC AI system panel, DI panel, PID panel, custom panel, global function block panel, Phase function block and system function block panel.
- AI panel, DI panel, DO panel, custom panel, custom single loop panel, conventional return panel.

Global function block has been configured in the configuration management software. Global function block library is "G_AA" and "G_A1" and "G_X1" are global function block of library of "G_AA" as shown below.

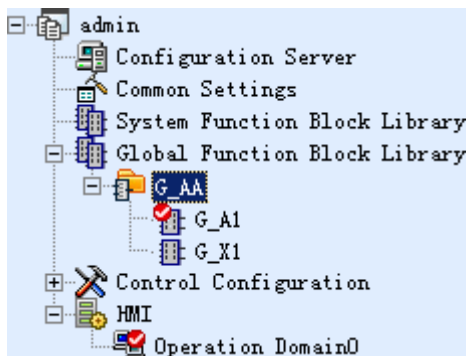


Figure 5-20 Panel Authority Configuration

Method of Panel authority of configuration function block is taken "G_A1" of configuration global function block as an example.

5.6.1 Open configuration software

Choose " domain configuration > panel authority" in the configuration tree in VFHMICfg. Pop up "VFPrivilege" software.

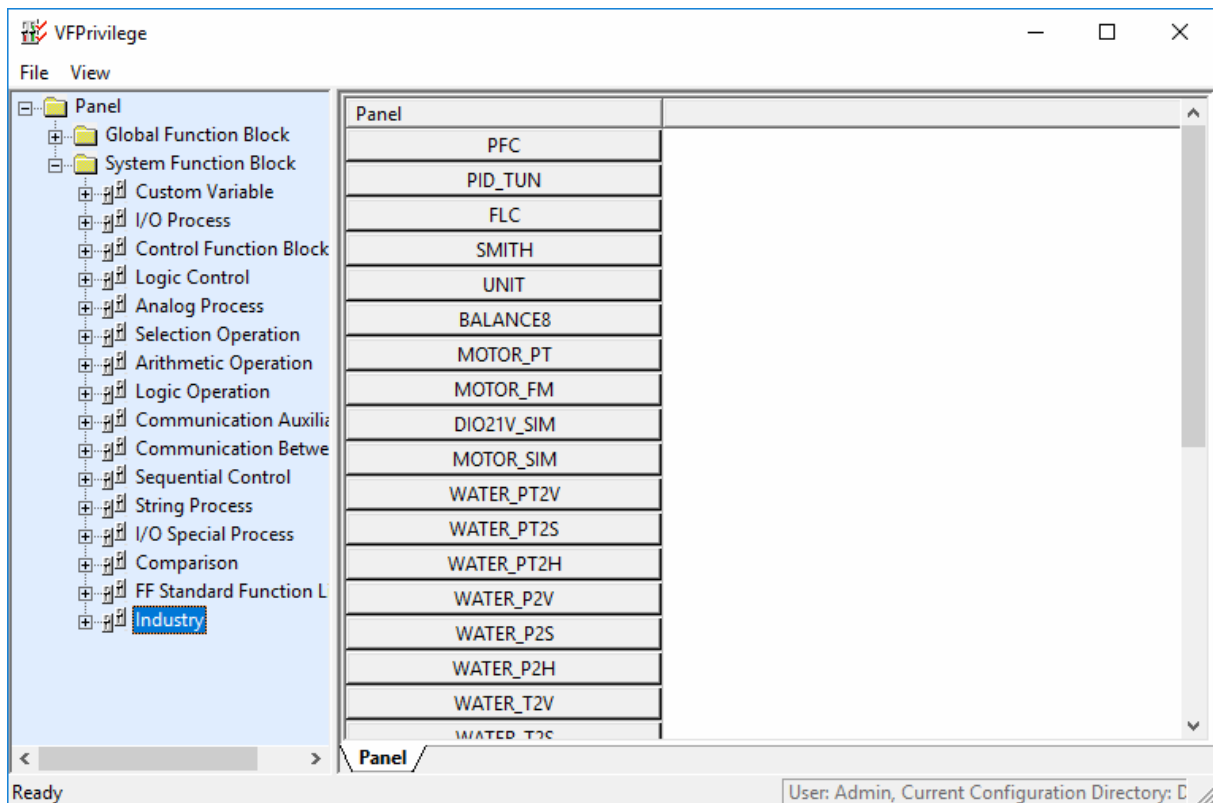


Figure 5-21 Global Function Block Configuration

VFPrivilege software is included as followed:

- Configuration tree is on the left, which can choose content of configuration such as panel, function block.
- Configuration area is on the right, which set panel authority of detailed panel.

5.6.2 Extend confirmation interval configuration

Extend confirmation interval indicates that in the status of supervision, when fast increase, increase, decrease or fast decrease is used in the instrument panel, reasons for modification should be input. When interval time of the two operations is less than the set interval time, there is no need to input the reason for the second operation.

Select "Panel" on the left of the interface and input time in "Set value". Time range is 0~60. After save and publish the changes, user should reopen the tag panel in monitoring to validate them.



Tip:

Extend confirmation panel will pop up when tags under selected "Panel extend confirmation authority" in the security setting node of system structure configuration software are changing its value by fast increase, increase, decrease and fast decrease.

5.6.3 Panel authority configuration

Select function blocks in a function block database, for example, "G_A1" of G_AA function block library, as shown in Figure 5-22.

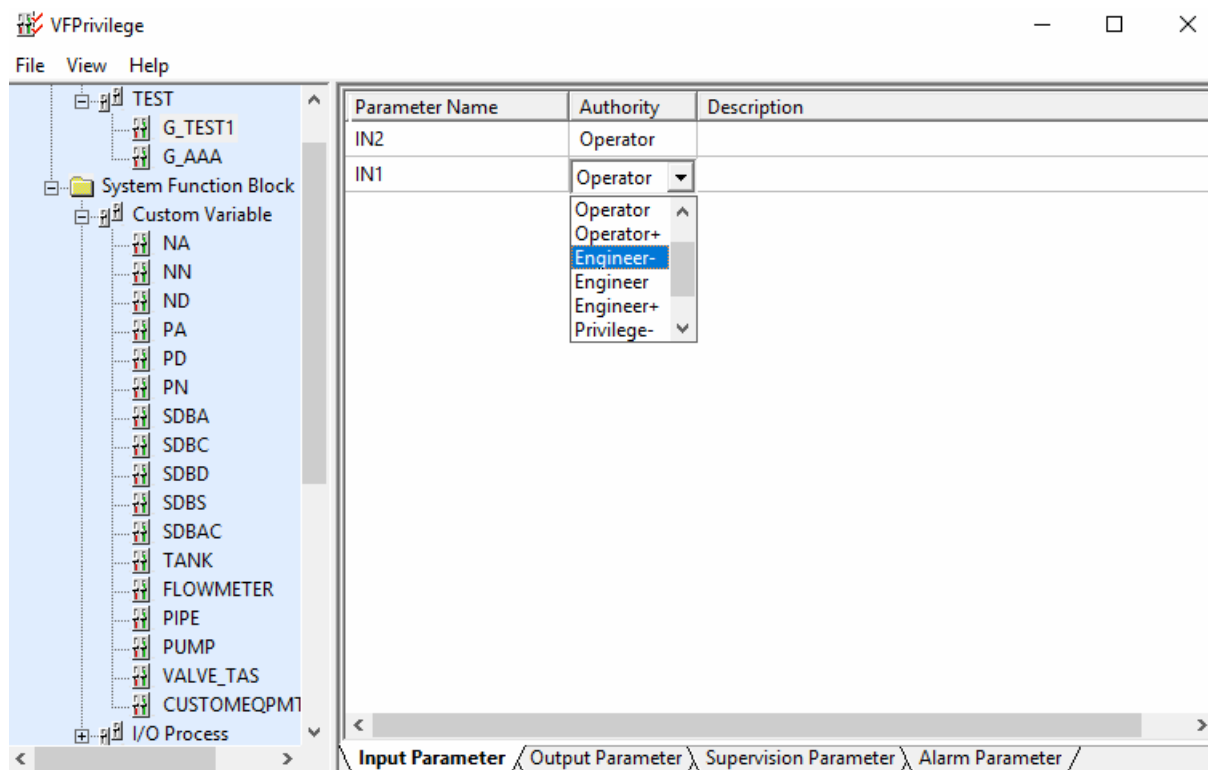


Figure 5-22 Authority Configuration of Panel Parameters

Select the "Input Parameter" pane, in which user can configure the input parameter for function block. User can set the operation authority for the parameter from the drop-down menu of authority. For example, select "Engineer-", so the lowest authority required to operate the tuning window of the function block is "Engineer-", only user with higher authority can operate.

Operation priorities in "Authority" list increase from top to down, the lowest priority is "Operator-" and the highest priority is "Privilege+".

User can also configure the parameter authority in panes "Output Parameter", "Supervision Parameter" and "Alarm Parameter".

User can also configure panel authority of system function block in the same way. Select a function block from a function block library, such as "AI" in IO process library, as shown below.

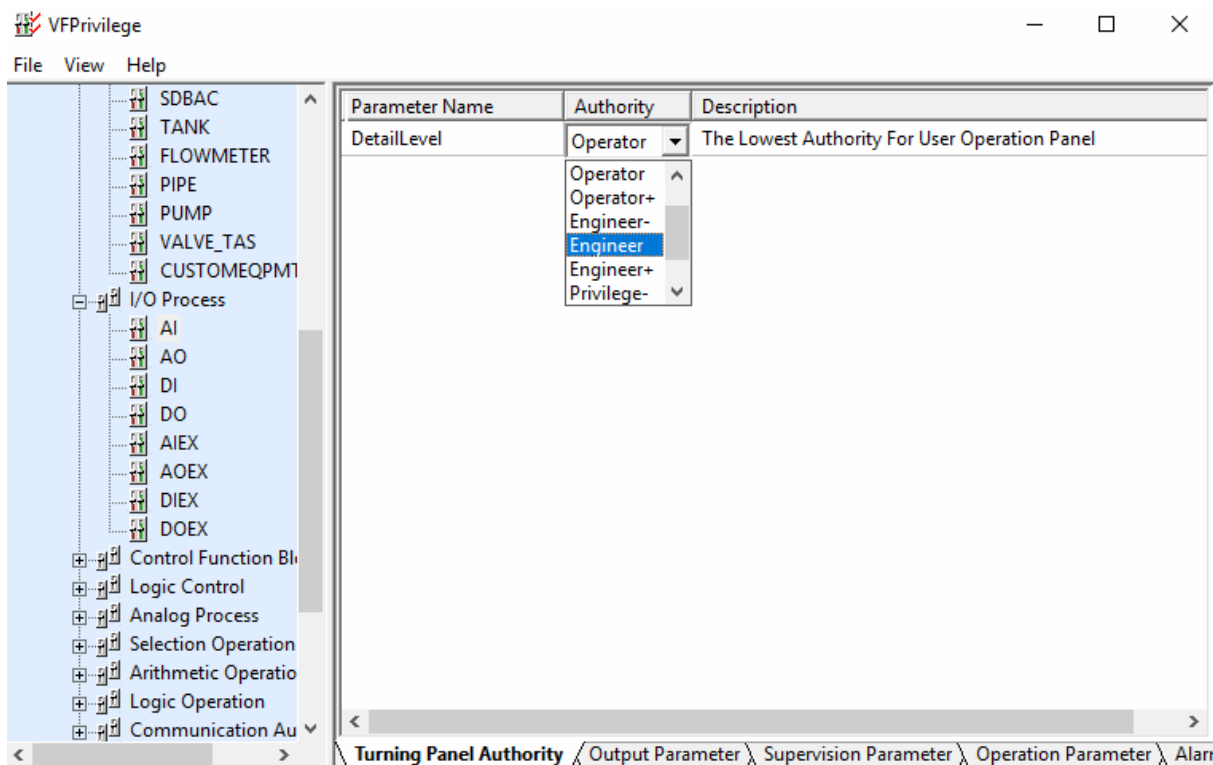


Figure 5-23 Panel authority configuration for system function block

When the page "Tune panel authority" is selected, the authority of parameters of the page can be set. For example, if "Engineer-" is selected, the lowest authority of operating the tuning panel of the function block is engineer- and only users above engineer- can operate the tuning panel.

The authority of parameters, such as input parameters, supervision parameters, operation parameters and alarm parameters can be set in the same way.

The authority of other function blocks can be configured similarly.

5.7 Batch Configuration



Tips:

1. The configuration tree of engineer station installing batch manager InPlantBatch has node "Batch Configuration", as shown in Figure 4-1.
2. Monitoring configuration of Batch is completed in VFDraw, please refer to *Graphics Builder User Manual* for details.

User can select the VxBatch server associated with High-performanceHMI via batch configuration and obtain its configuration data. Operation steps are shown below:

- Select **Domain Configuration/ Batch Configuration** in configuration tree to pop up the dialog below.

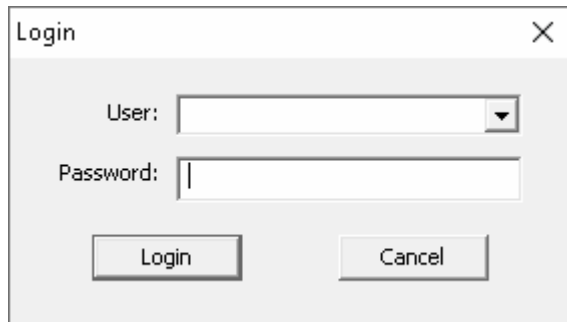


Figure 5-24 Login

3. Configure properties of VxBatch data by following table.

Table 5-3 Properties configuration of VxBatch data

Control	Function
User Name	User name of VxBatch database, "BatchAdmin" is default user name.
Password	Password of VxBatch database, "supcondcs" is default password.
Database	IP address of VxBatch database. User can click "Test Connection" to make sure the IP address is valid after configuration.

4. Click "Login" to login the VxBatch and configure batch management.



Tips:

1. Please refer to VxBatch User Manual for details.
2. After configuring the monitoring configuration and batch management database of VxBatch, user should publish configuration to monitor the batch management in VFLaunch.

5.8 Shelf Alarm

Operator can shelve alarm temporarily to avoid nuisance via alarm shelve. The shelved alarm will be restored automatically when reaching the shelve time. Maximum 10 shelves reasons and 8 self-define shelves can be configured in VFHMICfg.

After configuring alarm shelve conditions in VFHMICfg, user can shelve alarm for tag or tag group in real-time supervision software. This part mainly introduces how to configure shelf of alarm shelve in VFHMICfg.

5.8.1 Instruction

Only alarm satisfying 3conditions below can be shelved:

- Enable "Alarm Shelve" function in VFSysBuilder and enable "Alarm Shelve" function for alarm priority, please refer to System Builder User Manual for details.
- Configure alarm shelve conditions in VFHMICfg.
- Select alarm and configured alarm shelve item in shelf in alarm list of VFLaunch. Please

refer to Real-time Supervision Software User Manual for details.

5.8.2 Configuration Steps

Configure alarm shelves by following steps.

- Select **Domain Configuration/ Alarm Shelve** to pop up "Alarm Shelve" dialog below.

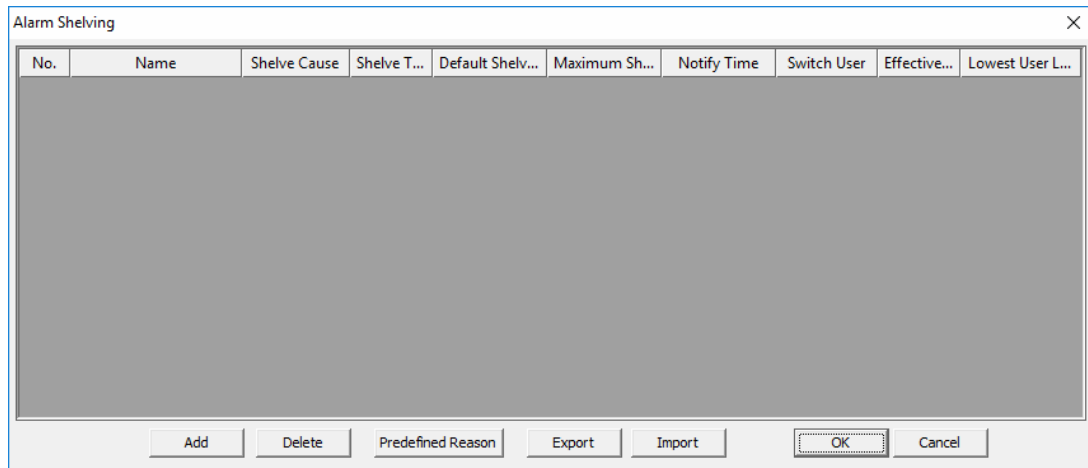


Figure 5-25 Alarm Shelve

- Click "Add" and "Shelving Information Setting" window as below pops up.

Figure 5-26 "Shelving Information Setting" window

- Configure properties for alarm shelving by following table.

Table 5-4 Properties of shelving

Items	Usage	Configuration
Shelf Name	As alarm shelf mark when shelving alarm in real-time monitoring.	Input in text box. Alarm shelf name cannot repeat in an operation domain.

Items	Usage	Configuration
Shelve Cause	The reason to shelve alarm.	Select from drop-down list, or create shelve reason as required. Please refer to 5.8.3 Self-define Alarm Shelve Reason for details.
Shelve Type	Select alarm shelve as once or continuous.	Select from the drop-down list: Select "Once", the alarm re-alarmed in shelve time will be shown in process alarm list, but not in shelve list. Select "Continuous", the alarm re-alarmed in shelve time will be still shelved and shown in shelve list.
Default Shelved Time	Default alarm shelve time in real-time monitoring.	Select from the drop-down list.
Max Shelved Time	Maximum alarm shelve time in real-time monitoring.	Select from the drop-down list.
Notify Time	Warn time when reaching the shelve alarm time (for example, show the icon 5min before shelve alarm completed).	Select from the drop-down list.
User Logout	Whether cancel shelve when switching user in real-time monitoring.	Select from the drop-down list: Auto cancel, shelved alarm will restore to process alarm list automatically. Not auto cancel, shelved alarm will keep in the shelve list.
Effective Range	Valid range of alarm shelve in real-time monitoring.	Select from the drop-down list: Single operation domain, alarm shelve is valid in operation domain with alarm. Single operation station, alarm shelve is only valid in current operation station.
Lowest User Level	Lowest user level to shelve in real-time monitoring.	Select from the drop-down list. Default is "Operator", all users above can shelve alarm.

**Tips:**

1. "Default Shelve Time" shall be less than "Maximum Shelve Time". Otherwise, create shelve failed.
2. "Shelve Notify Time" shall be less than "Default Shelve Time". Otherwise, create shelve failed.
3. "Valid Range" only can be configured while creating shelving.
4. If "Valid Range" is set as "Single Operation Domain", cannot set the shelve influence of "Switch User", i.e. shelve valid in operation domain is not influenced by switching user.

3. Click "OK" to save the alarm shelve configuration.

5.8.3 Self-define Alarm Shelve Reason

Default alarm shelve reasons in VFHMICfg includes plant maintenance, shut-down maintenance and nuisance alarm. If default shelve reasons cannot meet user requirements, user can self-define the alarm shelve reason by following steps.

- Click "Option" in Figure 5-26, and the "Shelve Cause" dialog below pops up.

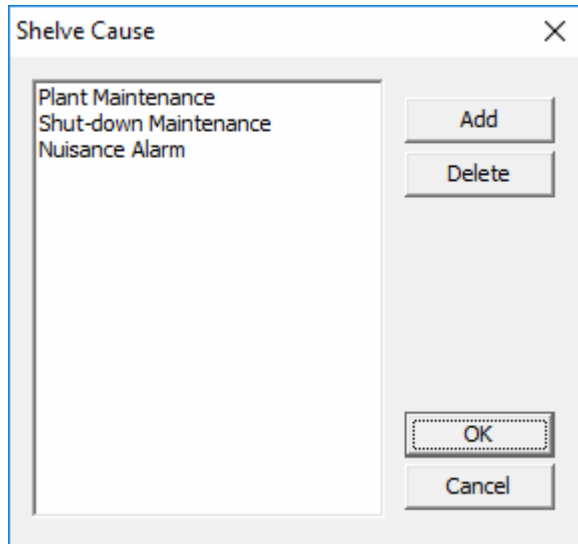


Figure 5-27 Shelve Reason

- Click "Add" and the "Shelve Cause" dialog below pops up.

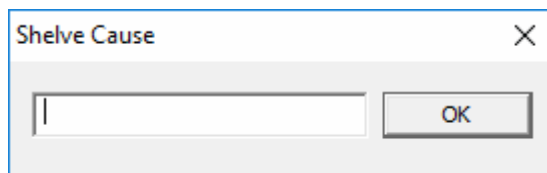


Figure 5-28 Create new shelve reason

- Input self-defined shelve reason in box and click "OK" to back to the "Shelve Reason" dialog in Figure 5-27.



Tip:

Shelve cause can only be set when creating shelf, but cannot be modified independently.

After adding new shelve reason, it will be shown in the shelve reason list.

5.8.4 Export and Import

Settings of alarm shelve can be exported as .dat file. Alarm shelve can be achieved by importing .dat file.

Export

Alarm shelve settings can be exported as .dat file by following steps.

1. Click "Export" in Figure 5-25, to pop up the "Save As" dialog.
2. Select name and path of .dat file in "Save As" dialog. Name of .dat file is "AlmActionRule.dat" in default.

3. Click "Save" to complete the operation.

Import

Import alarm shelve configuration .dat file to current configuration by following steps.

1. Click "Import" in Figure 5-25, to pop up the "Open" dialog.
2. Select the .dat file to import.

5.9 Manage State

State refers to common work scene in field, such as startup, running and shut-down, etc. VFHMICfg can configure state management via defining key equipment and tag, state and alarm.

Before starting state management, you need to enable the "State management" function in system builder, roe detailed operation please refer to the *System Builder User Manual*.

Select **Domain Configuration/ State Management** in VFHMICfg and the "State Management" dialog pop up, in which user can define key equipment, device state and related alarm operation.

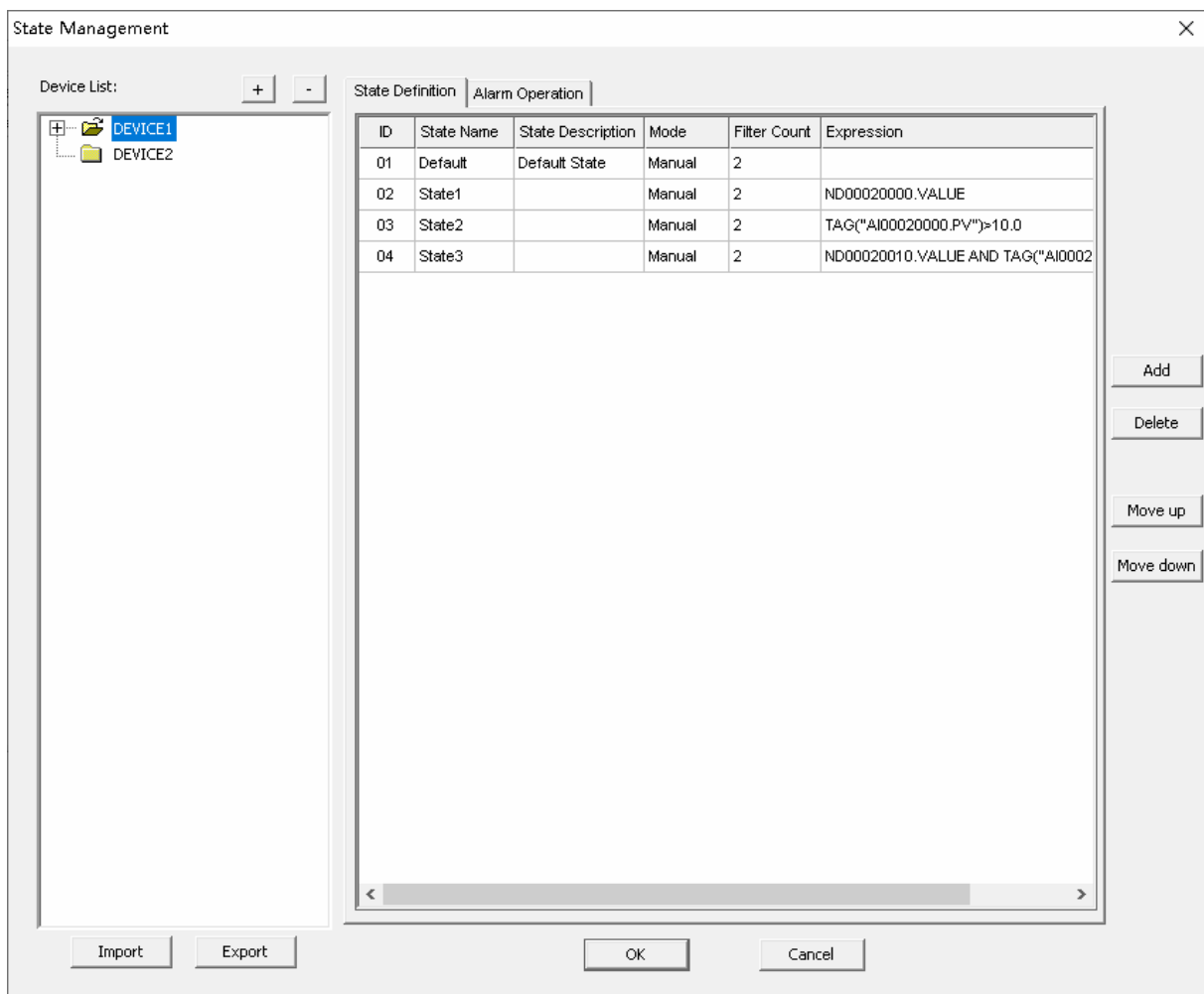



Figure 5-29 State Management

As shown in above, "State Management" mainly includes 3 parts:

- "Device List" area, which can define key equipment related to state, and import/ export configuration. High-performance HMI system supports maximum 100 devices and maximum 500 tags in one device. Device only supports tag associated to the operation domain.
- "State Definition" tab, in which can define common state related to device. Each device can define maximum 30 states.
- "Alarm Operation" tab, in which can define the change of alarm suppress, alarm threshold and alarm priority when generating state.

5.9.1 New Device and Related Tag

State definition should define the related important device and its important tag first. Create new device and related tag by following steps.

1. Click  in right of "Device List" to add new device in "Device Tree".
Note: name of state device in an operation domain cannot be repeated.
2. Select a device in "Device Tree", right-click it and select "Add Tag" to pop up "Tag Selector" dialog.
3. Select important tag related to device in "Tag Selector", the tag will be shown in "Device Tree".

5.9.2 Add State Definition

Define state by following steps:

1. Select a device in "Device List" and click "Add" in right, to add a new row in state list, as shown below.

ID	State Name	State Description	Mode	Filter Count	Expression
01	Default	Default State	Manual	2	
02	State1		Manual	2	ND00020000.VALUE
03	State2		Manual	2	TAG("AI00020000.PV")>10.0
04	State3		Manual	2	ND00020010.VALUE AND TAG('

Figure 5-30 New state

2. Configure state properties in new row (such as the "State 1" above) by following table.

Table 5-5 State properties

Items	Usage	Configuration
State Name	Mark the state.	Input in text box. Support maximum 32 characters.
State Description	Describe the state briefly.	Input in text box.

Items	Usage	Configuration
Mode	Mode switch mode when satisfying state expression.	Select "Auto": when satisfying state expression, perform the state action automatically and record the result. Select "Manual": when satisfying state expression, state button in alarm bar will flash. Click "Confirm Switch" to switch to the state manually. Select "Detect Only": when satisfying state expression, enter into detect mode, while not perform the state action.
Filter Count	Perform state action only when the results of expression for continuous several cycles values are not 0.	Select 1~5 from the drop-down list.
Expression	Confirm the expression when generating state.	Input in text box. Support maximum 500 characters. <ul style="list-style-type: none"> Support the expression containing tag name, methods of writing are as followed: Directly write the tag name (use spaces and other operators to separate) Use format TAG ("tag name"). Such as TAG("A.VALUE") AND TAG ("B.VALUE"). Support the mix of both methods above. Such as TAG("A.VALUE")AND TAG("B.VALUE").

After defining state, switch to "Alarm Operation" to set necessary alarm operations when generating state.

5.9.3 Configure Alarm Operation

Configure key device and its associated tag and device state in state management, then define the alarm in specific state. After configuring alarm operation, user can suppress alarm, modify alarm threshold and modify alarm priority for device tag in state automatically.



Tip:

While modified and published the configuration running in real-time supervision, alarm operation only can be valid after modified alarm happened again.

Configure Alarm Suppress

Configure alarm suppress in state by following steps.

1. Select device and click "Alarm Operation" tab in device list, to show the "Alarm Operation" interface below.

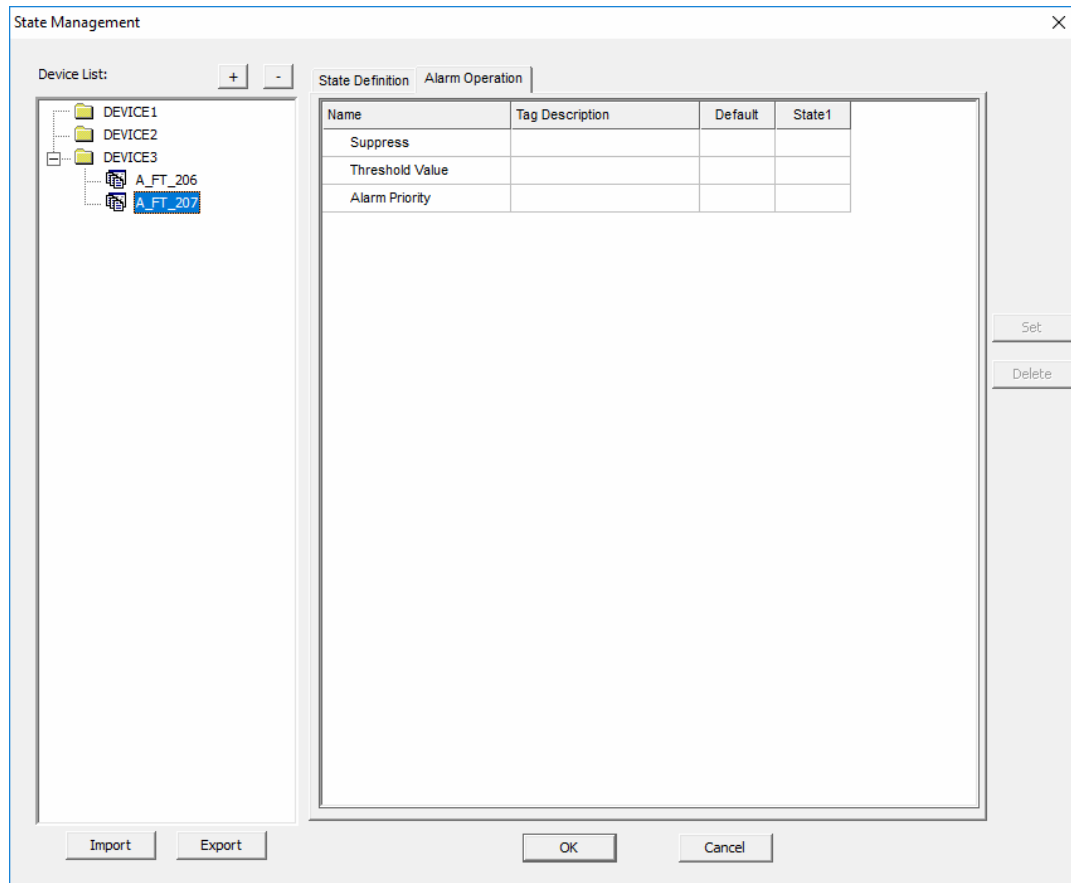
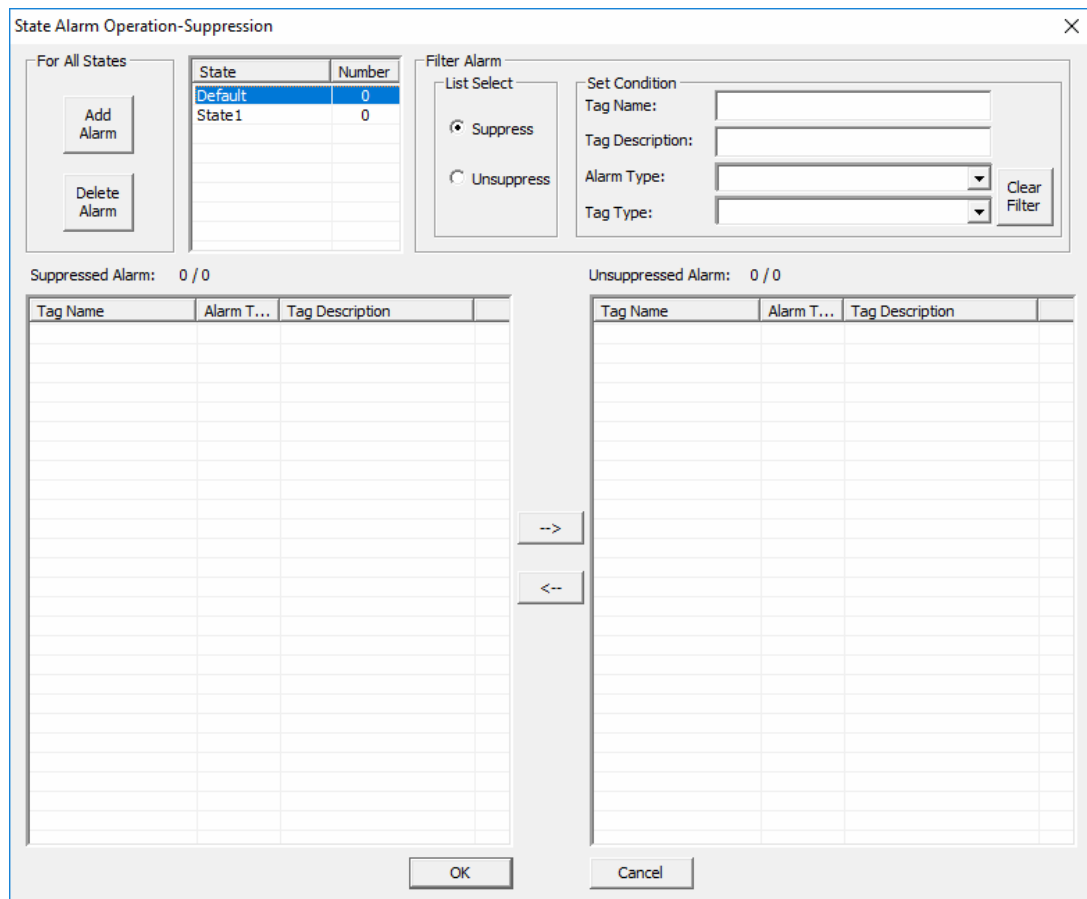


Figure 5-31 Alarm Operation

- Click "Suppress" row and the "Set" button will be available. Click "Set" to pop up the "State Alarm Operation-Suppression" dialog.



The dialog box is titled "State Alarm Operation-Suppression". It contains several sections:

- For All States:** Includes "Add Alarm" and "Delete Alarm" buttons.
- State List:** A table with columns "State" and "Number". It lists "Default" with a value of 0 and "State1" with a value of 0.
- Filter Alarm:** Includes a "List Select" section with radio buttons for "Suppress" (selected) and "Unsuppress".
- Set Condition:** Includes input fields for "Tag Name:", "Tag Description:", "Alarm Type:" (a dropdown menu), and "Tag Type:" (a dropdown menu). A "Clear Filter" button is also present.
- Suppressed Alarm:** A section showing "0 / 0" suppressed alarms. It contains a table with columns "Tag Name", "Alarm T...", and "Tag Description".
- Unsuppressed Alarm:** A section showing "0 / 0" unsuppressed alarms. It contains a table with columns "Tag Name", "Alarm T...", and "Tag Description".
- Navigation:** Between the two alarm lists are buttons for "-->" and "<--".
- Buttons:** "OK" and "Cancel" buttons are at the bottom.

Figure 5-32 State Alarm Operation-Suppression

3. Add alarms for all states

Click "Add Alarm" in "For All States" to pop up the "Add State Alarms in Batch" dialog below.

Add State Alarms in Batch

Filter Alarm
Number: 16 / 16
Tag Name:
Tag Description:
Alarm Type:
Tag Type:
Clear Filter

State Name	Suppres!
Default	Suppr...
State1	Suppr...

Tag Name	Alarm T...	Tag Description
A_FT_206	HHH	Standby
A_FT_206	HH	Standby
A_FT_206	H	Standby
A_FT_206	LLL	Standby
A_FT_206	LL	Standby
A_FT_206	L	Standby
A_FT_206	DPV	Standby
A_FT_206	ERR	Standby
A_FT_207	HHH	Standby
A_FT_207	HH	Standby
A_FT_207	H	Standby
A_FT_207	LLL	Standby
A_FT_207	LL	Standby
A_FT_207	L	Standby
A_FT_207	DPV	Standby
A_FT_207	ERR	Standby

Alarm List

OK Cancel

Figure 5-33 Add State Alarms in Batch



Tip:

Alarms in alarm list are for device associated tags, but no log priority alarm.

- Click "OK" after selecting one or several alarms in alarm list above to add them to "Suppressed Alarm" in "State Alarm Operation-Suppression" dialog, as shown below.

State Alarm Operation-Suppression

For All States

Add Alarm

Delete Alarm

State	Number
Default	3
State1	3

Filter Alarm

List Select

☒ Suppress

☐ Unsuppress

Set Condition

Tag Name:

Tag Description:

Alarm Type:

Tag Type:

Clear Filter

Suppressed Alarm: 3 / 3

Tag Name	Alarm T...	Tag Description
A_FT_206	DPV	Standby
A_FT_207	DPV	Standby
A_FT_206	ERR	Standby

-->

<--



Unsuppressed Alarm: 0 / 0

Tag Name	Alarm T...	Tag Description
----------	------------	-----------------

OK

Cancel

Figure 5-34 State Alarm Operation-Suppression (added alarm)

- Specify alarm suppress item for certain state.
Select a state in state list and select alarm in "Suppressed Alarm". Alarm to be suppressed in the state will be shown in "Suppressed Alarm" list. Alarm no need to be suppressed in the state will be shown in "Unsuppressed Alarm" list. User can adjust "Suppressed Alarm" and "Unsuppressed Alarm" by  and .
- After defining alarm suppress items for all states, click "OK" to complete alarm suppress configuration of state, and return to "State Management" interface below.

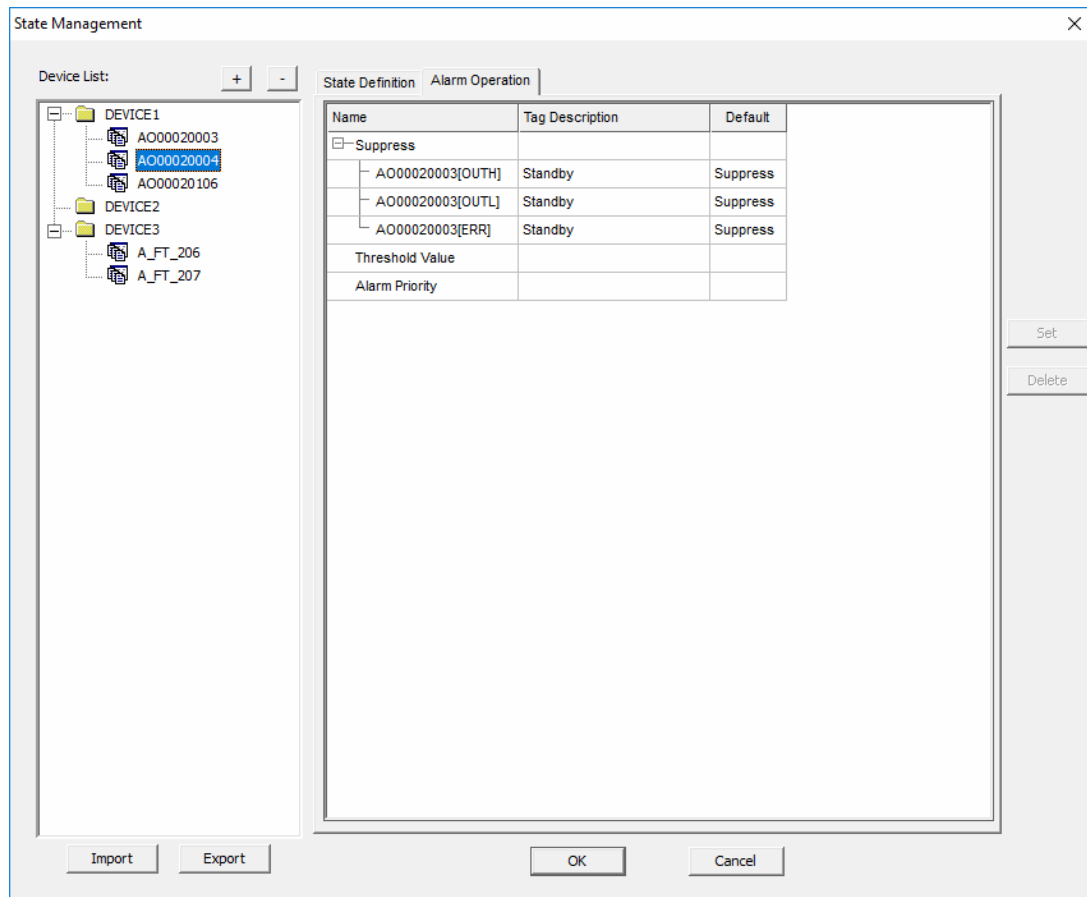


Figure 5-35 State Management (configured alarm suppress)

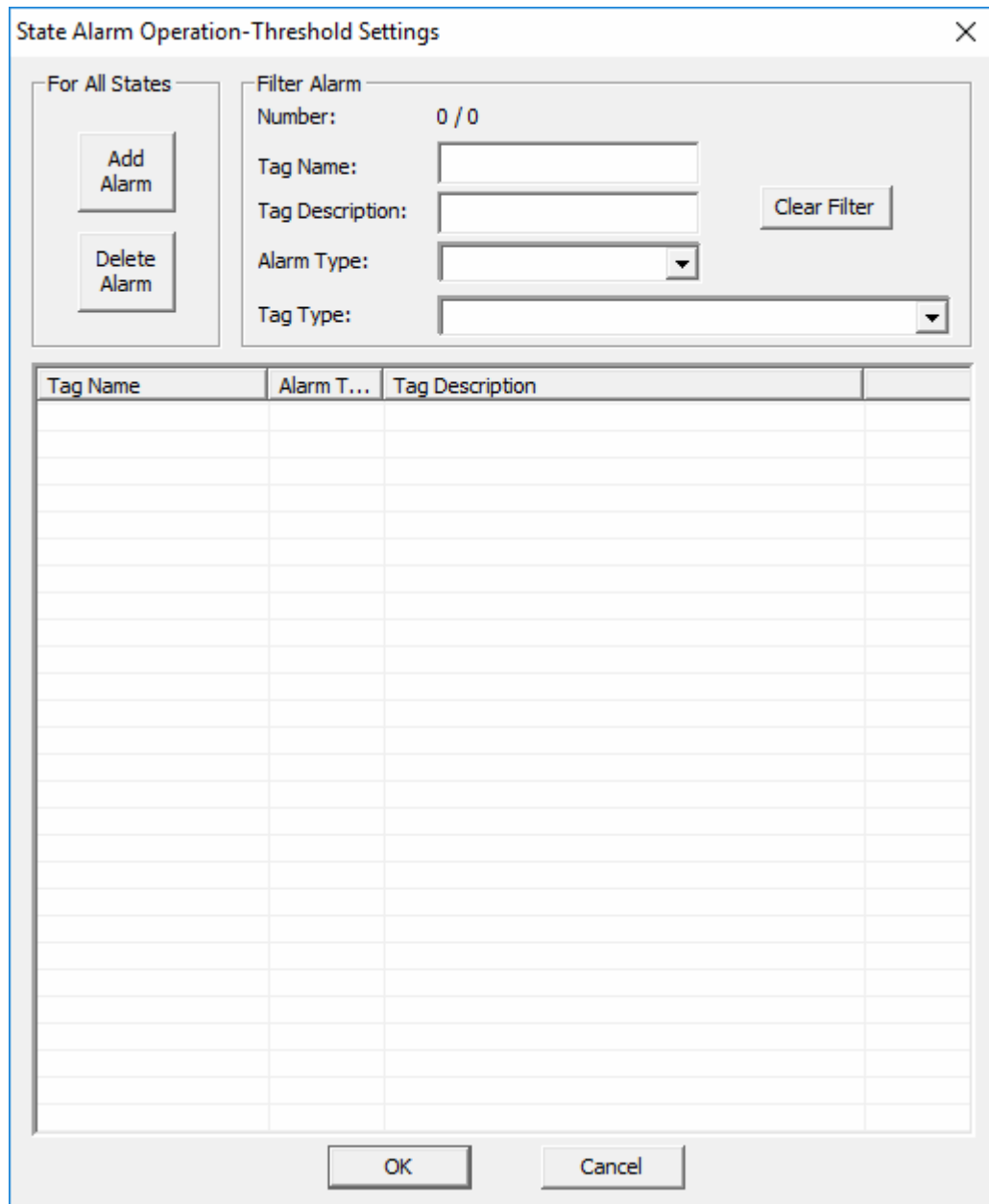
Alarm suppress information in state can be modified in interface above.

- Select alarm and select "Suppress" or "Unsuppress" to set the alarm suppress in certain state.
 - Select alarm item and click "Delete" in right to delete the alarm suppress operation.
7. Click "OK" to save the alarm suppress operation.

Configure Alarm Threshold

Configure alarm threshold in state by following steps.

1. Select device and click "Alarm Operation" tab in device list, to show the "Alarm Operation" interface in Figure 5-36.
2. Click "Threshold Value" row and the "Set" button will be available. Click "Set" to pop up the "State Alarm Operation-Threshold Settings" dialog.



The dialog box is titled "State Alarm Operation-Threshold Settings" and has a close button (X) in the top right corner. It is divided into several sections:

- For All States:** Contains two buttons: "Add Alarm" and "Delete Alarm".
- Filter Alarm:** Contains the following fields:
 - Number: 0 / 0
 - Tag Name: [Text Input Field]
 - Tag Description: [Text Input Field]
 - Alarm Type: [Dropdown Menu]
 - Tag Type: [Dropdown Menu]
 - A "Clear Filter" button is located to the right of the Tag Description field.
- Table:** A table with four columns: "Tag Name", "Alarm T...", "Tag Description", and an empty column. The table is currently empty.
- Buttons:** "OK" and "Cancel" buttons are located at the bottom center.

Figure 5-36 State Alarm Operation-Threshold Settings

3. Add alarm threshold configuration item for all states.
Click "Add Alarm" in "For All States" to pop up the "Add State Alarms in Batch" dialog below.

[illegible]

Figure 5-37 Add State Alarms in Batch (analog only)



Tip:

Alarms in alarm list are all analog tag alarms for device associated tags, but no log priority alarm.

- Click "OK" after selecting one or several alarms in alarm list above to add them to "State Alarm Operation-Threshold Settings" dialog, as shown below.

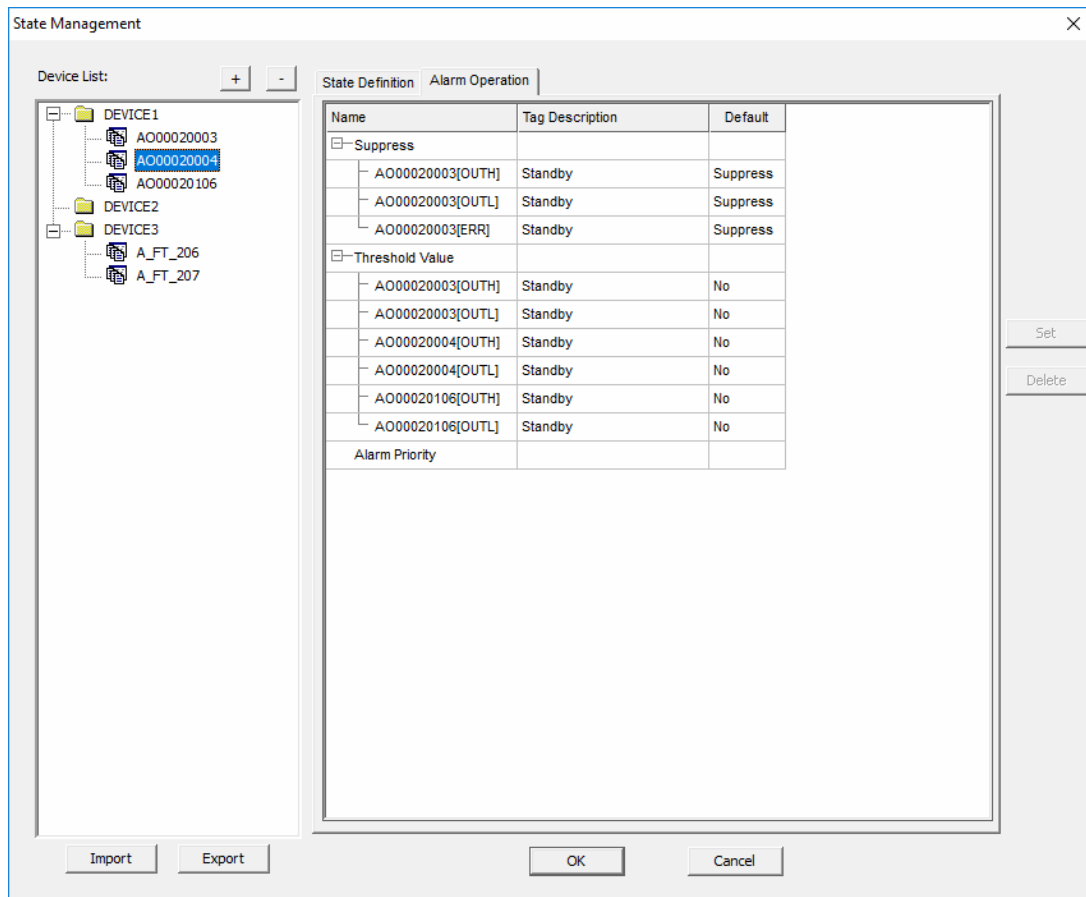


Figure 5-39 State Management (added alarm threshold)

6. Specify alarm threshold operation for certain state.
Select an alarm in threshold row and input alarm threshold in text box of state. After generating state, alarm threshold of tag will become input threshold.
7. After configuring alarm threshold for all states, click "OK" to complete alarm threshold configuration of state.
8. Click "OK" to save the alarm threshold operation.

Configure Alarm Priority

Configure alarm priority in state by following steps.

1. Select device and click "Alarm Operation" tab in device list, to show the "Alarm Operation" interface in Figure 5-40.
2. Click "Priority" row and the "Set" button will be available. Click "Set" to pop up the "State Alarm Operation-Priority" dialog.

[illegible]

Figure 5-40 State Alarm Operation-Priority

3. Add alarm priority configuration item for all states.
Click "Add Alarm" in "For All States" to pop up the "Add State Alarms in Batch" dialog below.

[illegible]

Figure 5-41 Add State Alarms in Batch

- Click "OK" after selecting one or several alarms in alarm list above to add them to "State Alarm Operation-Priority" dialog, as shown below.

State Alarm Operation-Alarm Priority

For All States

Add Alarm

Delete Alarm

State	Nu...
Default	12

Alarm P...	Nu...
Log	12
Low	0
Medium	0
High	0
Urgency	0
Safe Rel...	0

Filter Alarm

Number: 12 / 12

Tag Name:

Tag Description:

Alarm Type:

Tag Type:

Clear Filter

Tag Name	Alarm T...	Tag Description
AO00020003	OUTH	Standby
AO00020003	OUTL	Standby
AO00020003	ERR	Standby
AO00020003	CFGERR	Standby
AO00020004	OUTH	Standby
AO00020004	OUTL	Standby
AO00020004	ERR	Standby
AO00020004	CFGERR	Standby
AO00020106	OUTH	Standby
AO00020106	OUTL	Standby
AO00020106	ERR	Standby
AO00020106	CFGERR	Standby

OK Cancel

Figure 5-42 Add State Alarms in Batch

5. Click "OK" to back to "State Management" interface. Alarm added will be shown in "Priority" list.

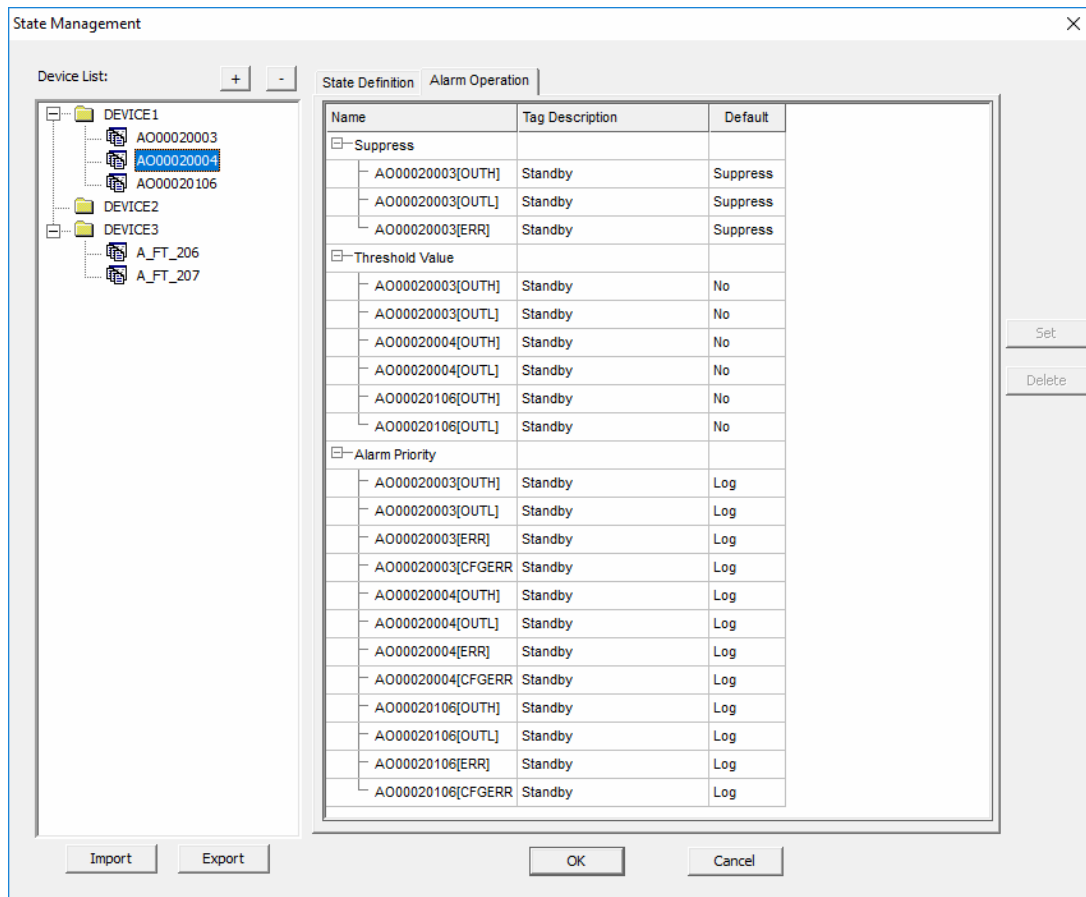


Figure 5-43 State Management (added alarm priority)

6. Specify alarm priority operation for certain state.
7. Select an alarm in priority row and select new alarm priority in drop-down list of state. After generating state, tag alarm priority will be same as configured.
8. After configuring alarm priority for all states, click “OK” to complete alarm priority configuration of state.
9. Click “OK” to save the alarm priority operation.

5.9.4 Import/Export State Configuration

State configuration and device configuration support the import and export of xml file, the exported file does not support modification, but supports reuse in other projects or operation domains.

State Configuration

After configuring all items of state management, user can export the state configuration as xlm file. Besides, xml file of state configuration can also be imported to system. Repeated configuration for state can be decreased via import/ export.



Tip:

State configuration support import/ export, but not support to import after modified.

State configuration can be imported/exported as xml file by following steps.

- Click “Export” in Figure 5-31 to “Save As” dialog. After selecting save path and file name of export file, click “Save” to pop up prompt of “Export state configuration file successfully”. Default file name of state configuration file is “DeviceMGCfg.xml”.
- Click “Import” in Figure 5-31 to pop up “Open” dialog. After selecting xml file, click “Open” to pop up prompt of “Import state configuration file successfully”.

Device Configuration

In state management interface, after selecting a device, select “import device” and “export device” list in the pop-up right-click menu to import or export device configuration.

- Export

If the exported file is in xml format, its default name is “DeviceMGCfg+ device name.xml”.

- Import

The xml file exported from state configuration or single device are supported. The rules of import are as follows:

- ☐ If there are devices with the same name in xml file and configuration, import directly the device configuration in xml file as the device configuration of the same name
- ☐ If there are no devices with the same name in xml file and configuration, and there is only one device in xml file, then import directly.
- ☐ If there are multiple devices in xml file and there is no device with the same name in configuration, there will be a prompt of whether to import the first one, and import or cancel according to the selection.

5.9.5 State Expression

Configure expression of generating state when defining state. State expression supports operator, actor and function.

Operator Supported by Expression

- BNOT, BAND, BOR, BXOR, MASK, GETB.
- AND, OR, XOR, NOT.
- +, -, *, /, MOD, ^.
- <, >, <=, >=, <>, =.

Actor Supported by Expression

- Number constant, such as 12.5.
- String constant, such as "abc".
- Logic constant, including TRUE and FALSE.
- Tag, in form of Tag ("XXX"), such as Tag ("AI001").

Function Supported by Expression

SIN, COS, TAN, LN, ASIN, ACOS, ATAN, LOG, INT, ABS, SQRT, EXP.

Sort Priority

Operator priorities are sorted from high to low as:

1. parenthesis
2. function
3. NOT
4. ^
5. *, / and MOD
6. + and -
7. <, <=, >, >=, = and <>
8. AND
9. XOR
10. OR.

5.10 Alarm Help

The High-performanceHMI system software supports configuring the operation help of the alarm in the monitoring configuration, and pops up the alarm help as needed when the alarm is generated in the real-time monitoring, and then guides the processing of the alarm.

The alarm help in the High-performanceHMI system software supports the following two forms:

- Help template

The help template is used to define the display content and form of the alarm help. The High-performanceHMI system software supports two kinds of help templates, namely an HTML template (.html file) and a JSON template (.json file). After configuring the alarm help in the monitoring configuration software, after the alarm contained in the alarm help is generated in the real-time monitoring, the alarm-related help file will pop up.

- Procedure documents

Procedure documents (.doc) defines the cause, operational suggestion and possible

results of tag alarms. After configuring procedures in the monitoring software and alarms included in the procedure occur in the real-time monitoring, the tag alarm-related procedure documents will pop up.

5.10.1 Configure Types of Alarm Help

During monitoring configuration, you can specify the type of alarm help in the current project. Only one type of alarm help is supported in a project. For example, if you select “alarm help template” as the configuration method of alarm help, you can only use the alarm help template to create alarm help, but you cannot import the alarm procedure file.

1. Select “Domain Configuration> Alarm Help” in the navigation tree, and select “Edit” in the right-click menu. The dialog box shown in the figure below is displayed

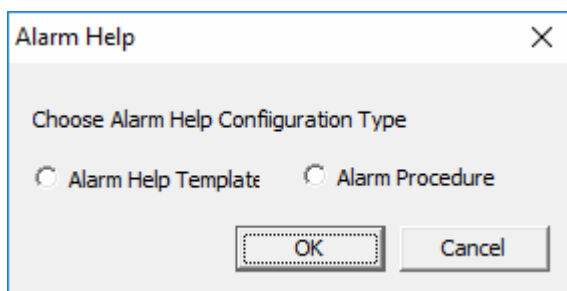


Figure 5-44

2. Select the type of alarm help according to actual needs.
3. Select “Alarm Help Templates” to create an alarm help based on the alarm template.
4. Select “Alarm Procedure”, then create a procedure file based on the alarm procedure template and import it into the project.
5. Click “OK” to save the current configuration.

5.10.2 Configure Alarm Help as per Alarm Help Templates

When configuring the alarm help as a “help template”, you can configure the alarm help by the help template according to the following operations.

Alarm help template description

The help template that comes with the High-performanceHMI software is saved in the “High-performanceHMI installation directory / Alarm Help Template” folder, which can be customized according to actual needs. By default, the help template contains information such as the alarm name, alarm description, alarm registration, cause, recommended action, and consequences of unhandled alarms.

Configure alarm help

1. Configure the type of alarm help as “Alarm Procedure”, see “Configuring the Type of Alarm Help” for details.
2. In the navigation tree, select “Domain Configuration> Alarm Help> Help Template” and select “Add Template” in the context menu.

3. In the pop-up “Select Template” dialog box, select the alarm help template and open it. If you need to use the help template that comes with the High-performanceHMI system, select the help file in the “High-performanceHMI installation directory / AlarmHelpTemplate” folder. After the template is added successfully, a new node will be added in the navigation tree. The node name is the file name of the help template, such as the system’s default help name “template1”.
4. Select the added help template and the alarm help configuration page shown in the figure below will be displayed on the right.

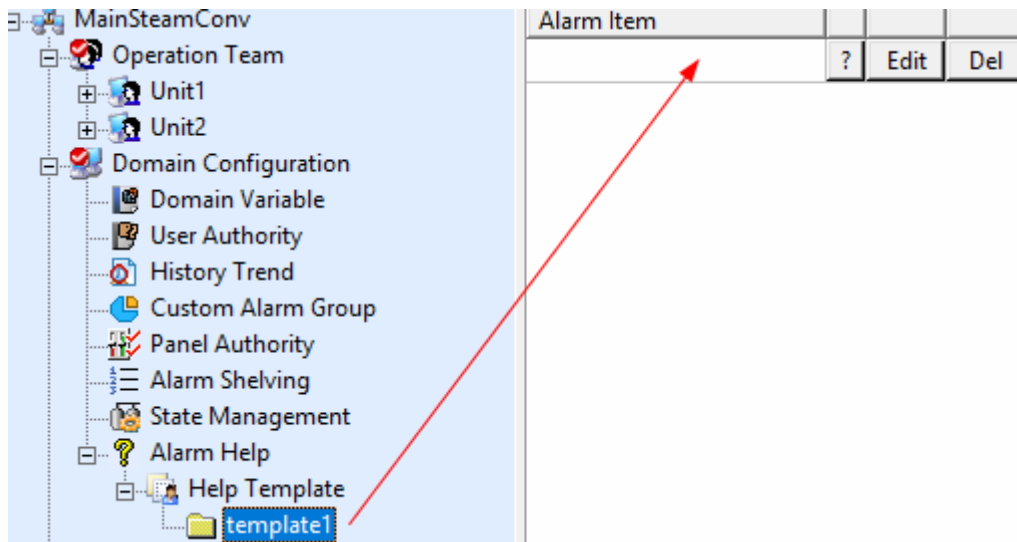


Figure 5-45Configure alarm help as per templates

5. Click “?” And select the tag name and alarm type in the pop-up dialog box. After configuration, the tag name [alarm name] will be displayed, such as “AI01020002 [HHH]”
6. Click “Edit” and configure the alarm help information such as the cause of the alarm and recommended actions in the dialog box shown in the figure below.

AI00020000[HHH]
Standby
Low

Alarm Generating Reason

Recommanded Action

Consequence of Inaction Normal

Explanation

OK Cancel

Figure 5-46 Configuration interface of alarm help

7. Click "OK" to save the alarm help configuration.

Import \ Export Alarm Help

After configuring the alarm help according to the template, you can import / export the csv file to backup and reuse the alarm help. The specific steps are as follows:

- 1) In the navigation tree, select "Domain Configuration> Alarm Help> Alarm Template".
- 2) Select in the right-click menu:
 - "Import" will import the alarm help information in the csv file to the selected alarm template.
 - "Export" will export all alarm help information associated with the current alarm template to a csv file. In the exported csv file, you can configure alarms and alarm help information in batches. If the alarm information is configured in the csv file and the alarm template is not modified, the modified alarm help file can be imported into the alarm template

5.10.3 Import Alarm Procedure Documents

When configuration alarm helps as “alarm procedure”, you can configure and import alarm procedure by the following steps.

Procedure Document Format

After installing High-performanceHMI system software, “alarm-procedure” folder in installation path has template of procedure file. Template of procedure file is saved in “C:\OMC\VisualField4\NIsChs\alarm-procedure” in default.

Procedure file contains parts below:

- Title page: introduce the contents such as enterprise information and version of procedure file.
- Table of contents: list all alarm information in procedure file. Alarm information includes tag name, alarm type, alarm description and page number of procedure file.
Note: the page number in alarm information should be same with real page number of procedure file. Otherwise, import will fail.
- Procedure page: list contents such as generation reason and operation suggestion of alarm.



Tip:

Procedure file is .doc. Please make sure office2007, office2010 or office2013 has been installed before configuring procedure.

Convert Procedure Documents

After editing procedure file in office software by template, convert procedure file to High-performanceHMI project to show it in real-time monitoring.

Convert procedure file by following steps:

1. the type for configuring alarm help is “alarm procedure”, for details, refer to Configure Types of Alarm Help.
2. Select **Domain Configuration/ alarm help/ Procedure** in structure tree, right-click and select “Interfer Procedure” and the “Convert Import Procedure” dialog will pop up.

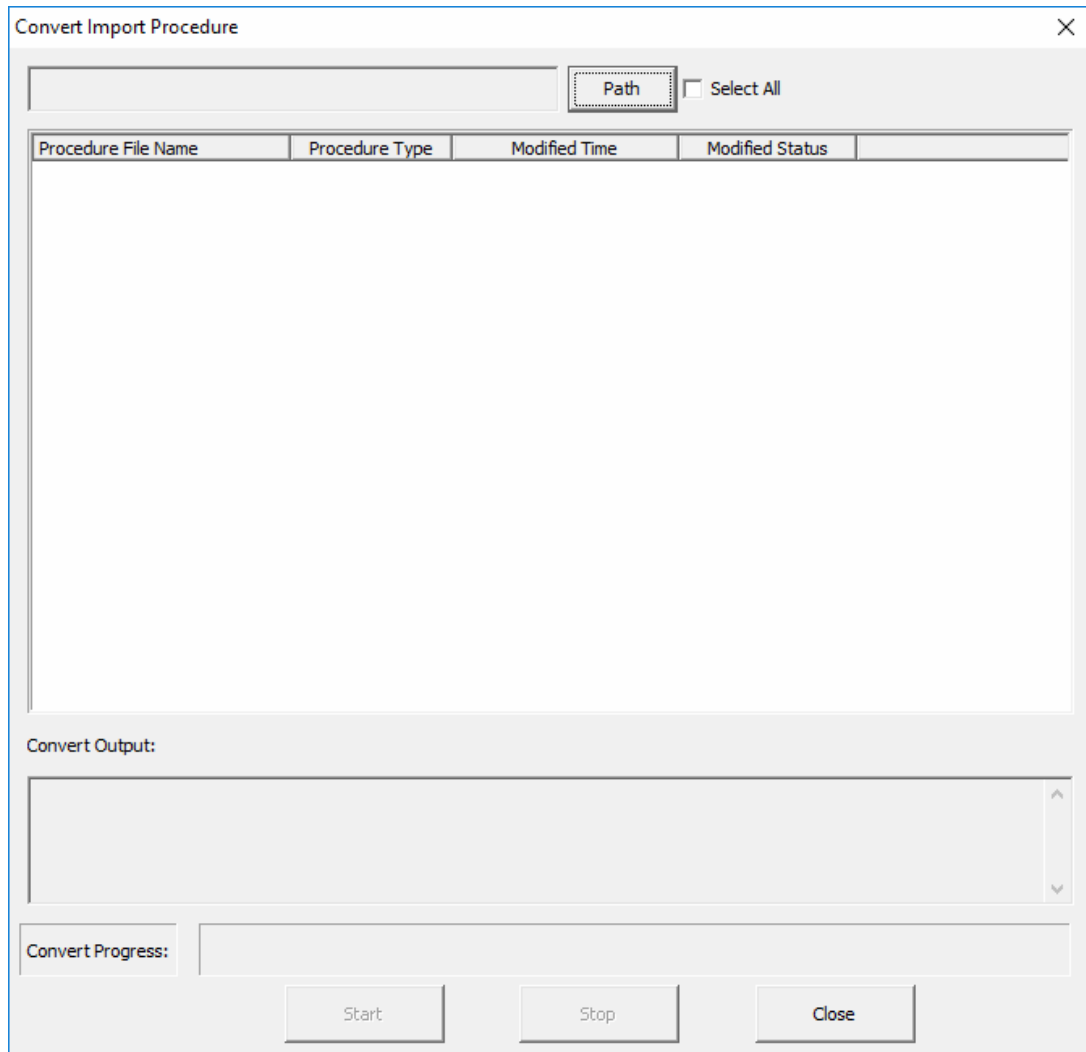


Figure 5-47 Convert Import Procedure

3. Click "Path" and select procedure file in the "Browse for Folder" dialog popped up. The default path of procedure file is "C:\OMC\VisualField4\NlsChs" folder, and n is determined by the version of using High-performanceHMI.
4. After selecting path of procedure file, click "Start" to import procedure file from folder to current project.

After importing procedure file successfully, file name, type, modify time and status of procedure file will be shown in list.

Import\ Export Procedure File

After importing procedure file to project, the procedure file can be backup and reused by importing/exporting .zip file. Operation steps are shown below:

1. Select "Domain Configuration/ Alarm Help" in structure tree.
2. Select in right-click menu:
 - Export: export procedure file in project as .zip file.

- Import: import procedure file if .zip file to project.

5.11 Video Monitor Configuration

Install Visual AI software after installing High-performanceHMI system software. Open Visual AI in the VFHMICfg software to configure video monitoring.

5.11.1 Configuration Steps

Configure video monitor can be done by the following.

1. Open VFHMICfg and double-click "Visual AI" node as followed.

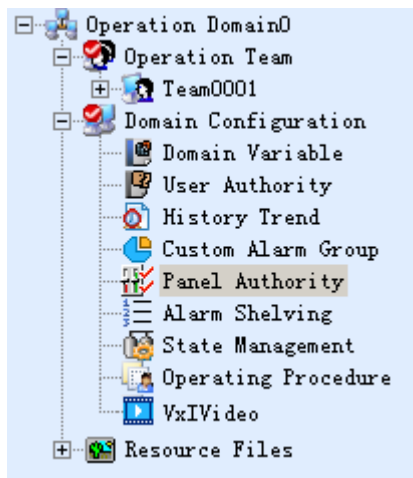



Figure 5-48 "Video frame" node in VFHMICfg

2. Video configuration software of Visual AI will pop up./ Detailed operation of camera configuration, video frame configuration, associated configuration in the configuration software refer to *Visual AI software manual*.

5.11.2 Video Monitor

Finish video configuration of Visual AI, monitor configuration of High-performanceHMI and publish to the operation station. Then video monitor can be started in High-performanceHMI real-time monitoring software. The specific steps are as follows:

1. On VFLaunch which monitor real time of High-performanceHMI. Floating window of Visual AI Server which Visual AI includes will be increased in the screen. Visual AI Server .

2. Right click , the menu will pop up.

Video monitoring interaction can be realized by monitor process in VFLaunch such as graphics, dispatch, give an alarm, or open video frame in Visual AI by using Visual AI Server.

Detailed operation guide of video monitor by Visual AI Server refer to *Visual AI software manual*.

Section 6 Resource File

All files in PIC folder (graphics file), POPPIC folder (pop-up graphics), BGTemplate folder (graphics background template), SCH folder (schedule), TGD (tag group), Template (graphic object template) under local configuration directory will be listed in corresponding resource files. The graphics resource files are listed as follows.

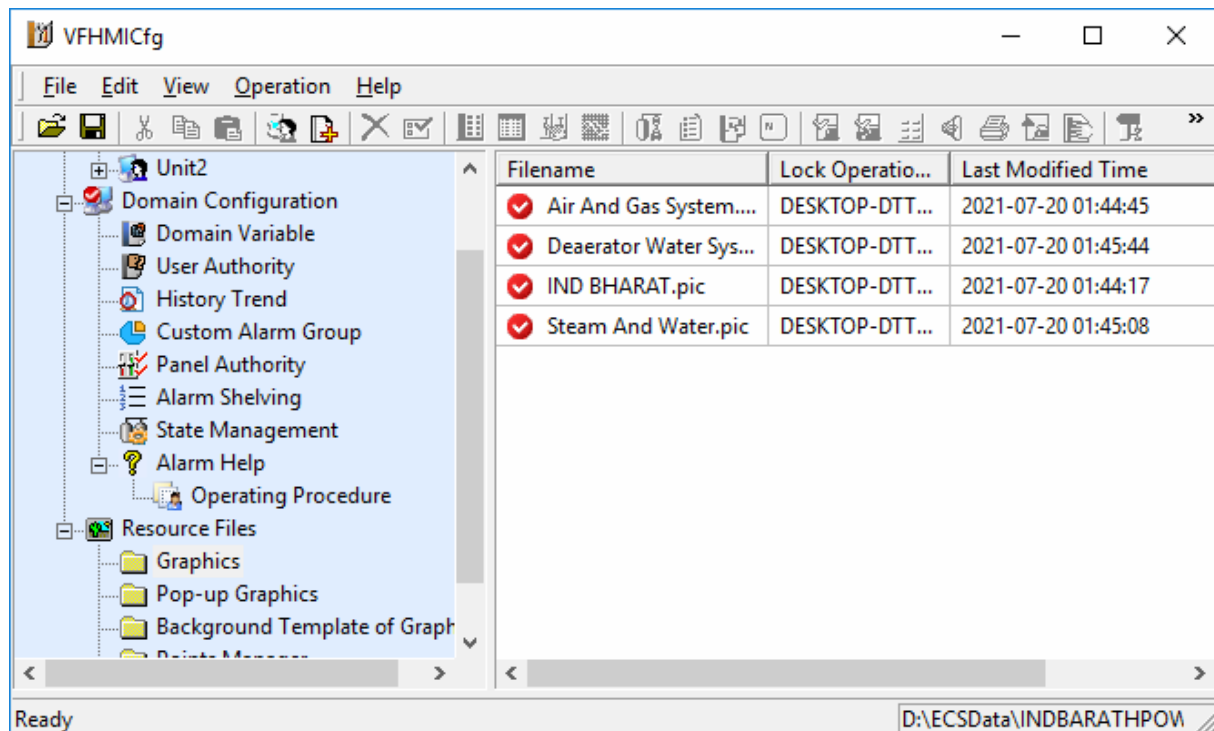


Figure 6-1 Resource File List (Graphics)

In general, these resource files are in unlock status and can't be edited. If users need to edit these files, they should lock them first. Click the button "Edit" and a message box of confirmation about whether to lock resource files pops up. Click "OK" and the resource file can be edited. The marker


✓ will appear in front of the filename and the name of the operator station (engineer station) that locks the file will be displayed in the lock operation station bar. If the resource file is locked by users of another operator station (engineer station), the marker ✓ will appear in front of the resource file and the name of the operator station (engineer station) that locks the file will be displayed.

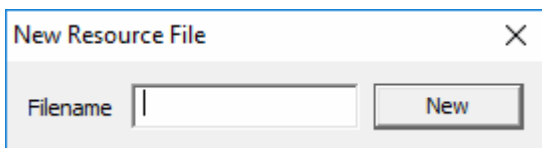
When there is a local resource file that is not displayed on the server, an arrow marker will appear in front of the resource file name, indicating that there is no such resource file on the server and the user needs to upload it, as shown in the Figure 6-2.

File Name	Lock Operation ...	Last Modified Time			
Air And Gas System.PIC		2010-01-17 15:33:30	Edit	Delete	
✓ Steam And Water.PIC	ZZN	2010-01-25 16:51:56	Edit	Delete	
Deaerator Water Sys...		2010-01-17 15:34:14	Edit	Delete	
Ignition Oil System.PIC		2010-01-17 15:34:38	Edit	Delete	
Pipeline and Fixation ...		2010-01-17 15:35:12	Edit	Delete	
Limestone Feeding Sy...		2010-01-17 15:35:30	Edit	Delete	
Cooling Water System...		2010-01-17 15:35:50	Edit	Delete	
Plant Steam System.PIC		2010-01-17 15:36:26	Edit	Delete	
Lube Oil System.PIC		2010-01-17 15:47:02	Edit	Delete	
✗ Turbovisory System.PIC		2010-01-17 15:47:22	Edit	Delete	
Turbovisory System2...		2010-01-17 15:47:42	Edit	Delete	

Figure 6-2 The Marker of No Resource File on the Server

6.1 New resource file

Graphics (exclude graphics background template and graphic object template), tag group and schedule file in the resource file can be built by inputting a filename in the resource list. Select the graphics and click the button  and a dialog box as follows will pop up, in which users can input the file name.



The dialog box titled "New Resource File" contains a text input field labeled "Filename" and a button labeled "New".

Figure 6-3 Newly-built resource file

Click "New", and the graphics editing interface will pop up in which graphics can be edited (lock and upload the resource file automatically).



Tip:

Local new resource files are uploaded to the server automatically (in lock mode).

6.2 Create New Folder

Right-click a resource file type and select "New Folder" (only supporting "Graphics", "Pop-up Graphics" and "Tag Group"), as shown below.

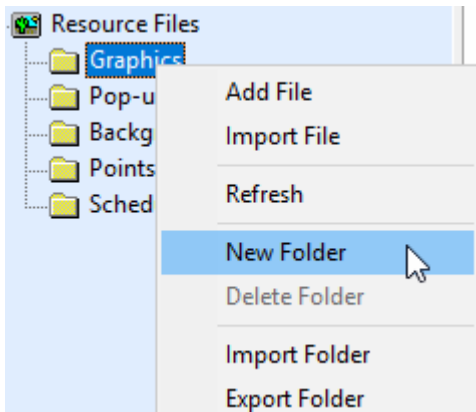


Figure 6-4 Create new resource folder

The “New Folder” dialog as shown below will pop up.

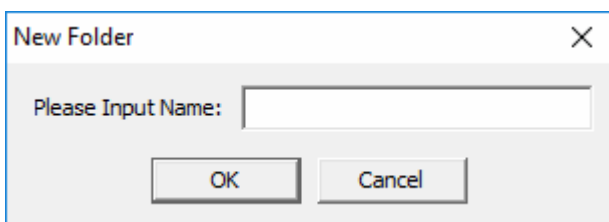


Figure 6-5 Set new folder name

The name length cannot exceed 30 characters, nor be empty. Sub-folder name cannot repeat in the same priority. Click “OK” to create the new folder, which can create new sub-folder by right-clicking. There is no priority number limit, while 3 priorities are recommended. Each folder can have 50 sub-folders.



Tips:

- Folder can contain sub-folder and file.
 - The right-click menu command “Delete Folder” of graphics and pop-up graphics are grey and invalid.
 - Folders in tree node are sorted by file names.
-

6.3 Delete resource files

Resource files that haven’t been locked by other users can be deleted and corresponding files of local and on the server will be deleted simultaneously. If the operation domain is locked by the current user after deleting, users will be queried about whether to simultaneously delete the reference relationship of corresponding resource file in the operation team. Deleting folder will delete the specified folder path and all its sub-folders and files, and refresh the tree node.

**Tip:**

Before deleting a folder, please check whether any file in it or its sub-folder is locked by other station. If yes, the deleting cannot be performed.

6.4 Update resource files to local

Right-click on the resource file list, the menu will pop up, as shown in the Figure 6-6 (if the resource file is unlocked, only the operations of "Update new resource file to local", "Find resource files" and "Export Res File" are available and others in gray, unavailable).

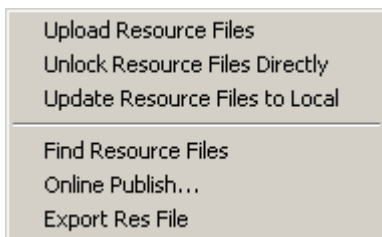


Figure 6-6 Right-click Menu of Resource Files

Choose "Update Resource Files to Local", a dialogue box of whether to update resource files will pop up. Select "OK" to update it, i.e. local resource files are replaced by files with same names on the server. (If the resource file edit software is opened when the resource file is updating, and the system will prompt a dialogue box showing that the software is open and resource files can't be updated until corresponding software is closed).

6.5 Find resource files

Select "Find resource files" in the right-click menu and a dialog box will pop up, as shown in the Figure 6-7.

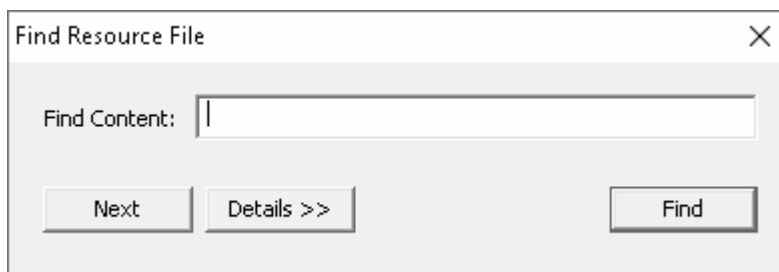


Figure 6-7 Find resource files

Input the name of the file to be searched and click "Find". Fuzzy search is supported, for example, there are three graphics in the graphics resource file: Steam And Water, Deaerator And Water System and Cooling Water System. Input "Water" in "Find Content" and click "Find". One resource file whose name includes "Water" is found first. Click the button "Next" and search for a next one.

Click the button "Detail" to display all resource files whose name include " Water " and their whether the current file is locked and the last modification time, as shown in the Figure 6-8.

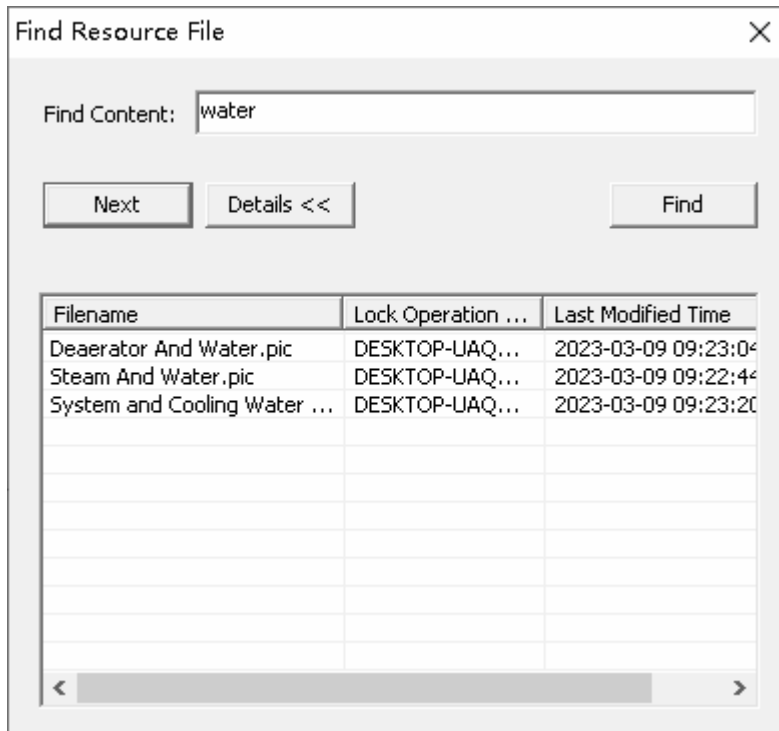


Figure 6-8 Details of Search Files

6.6 Save to Configuration Server& Save to Configuration Server and Keep Locked

There are 2 ways to save source file:

- For local resource file to be uploaded to configuration server, right-click it and select "Save to Configuration Server".
- For resource file to be saved and keep locked by current user, right-click it and select "Save to Configuration Server and Keep Locked".

6.7 Unlock resource files directory

Select "Unlock Resource Files Directory" in the right-click menu, and a prompt of "This operation will lead to lost saved contents, sure to continue?". Click "OK" to unlock the resource file. If the file is in edit status, the file edited will be in not editable status and in read-only status after the operation.

6.8 Online publish

Only the resource files that are locked by the current user can be published on line. Choose "Online Publish" (if the resource file has not been uploaded, it will be uploaded automatically first),

a dialog box will pop up, as shown in Figure 6-9.

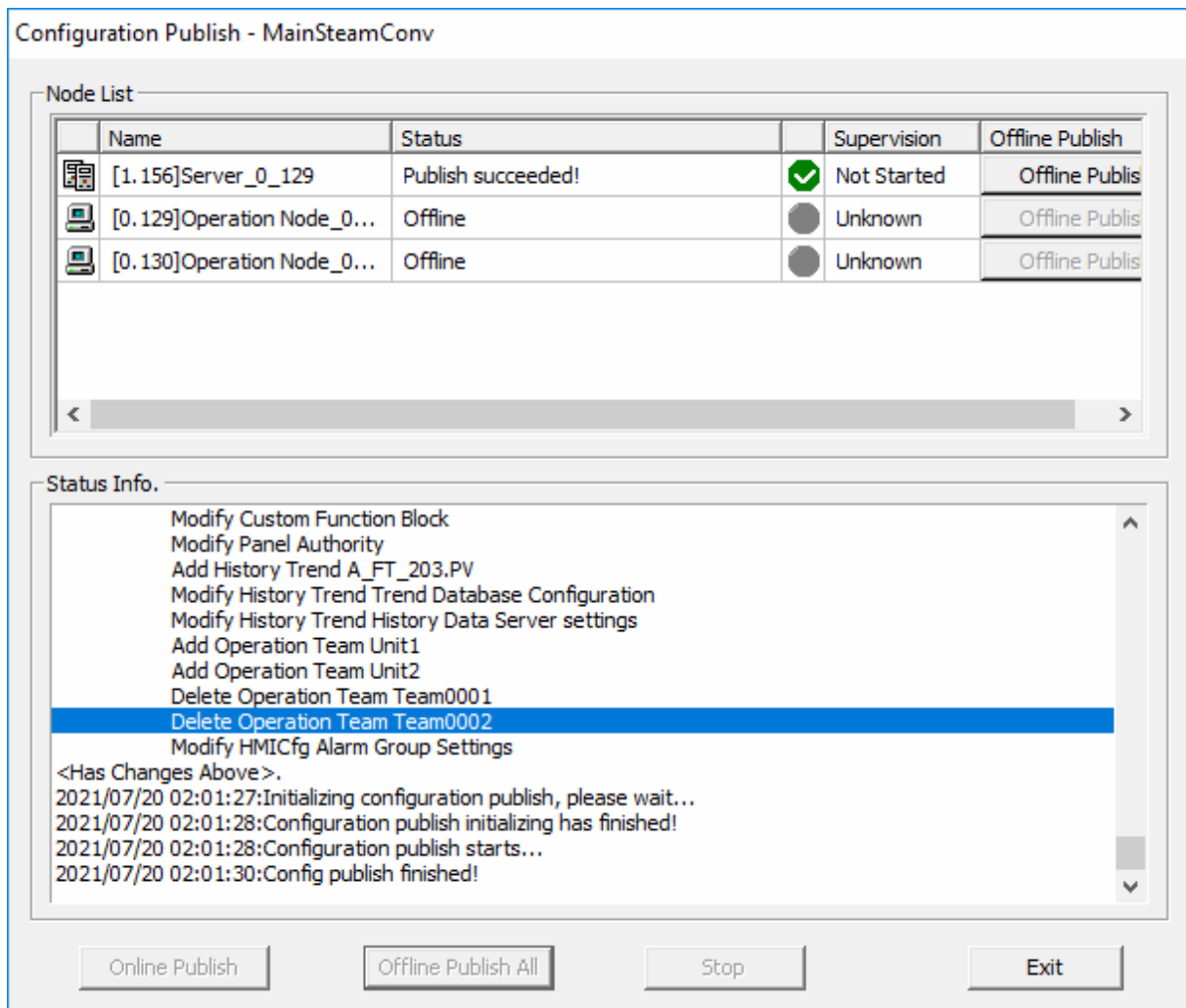


Figure 6-9 Dialog Box of "Configuration Publish"

The modified part will be listed in "Status Information". Click the button "Increment release" to implement this operation



Tips:

- The publish will not update outer configurations such as reference tag change in graphics, new graphics, etc.
- Please refer to section "Configuration Publish" for details.

6.9 Export/Import Resource File

6.9.1 Export File

Select a resource file in the resource file list, right-click it and select "Export Res File", pop up Browse for Folder dialog box, select the directory and click "OK" to export the file.

6.9.2 Import File

Select a type of resource file and select "Import File" in its right-click menu, as shown below. Pop up "Import Resource File" dialog box, import the corresponding resource file. Support multi-selection by Ctrl and Shift and can import several resource files at one time.

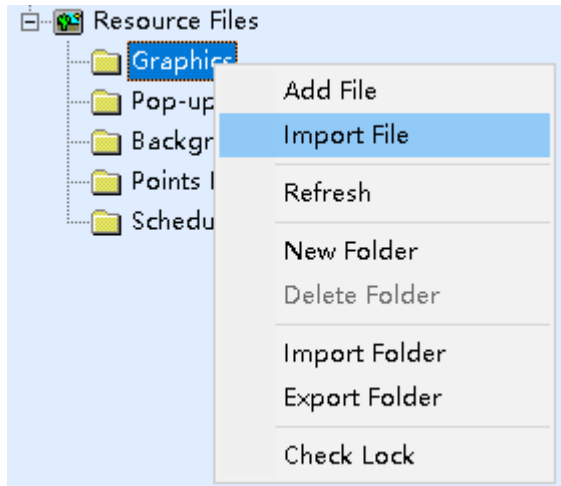


Figure 6-10 Import File



Tip:

Resource file supports custom group, and support importing by original group.

6.10 Import/Export Resource Folder

The workload of configuration repeat can be reduced by import/export resource folder.

6.10.1 Export Resource Folder

Resource folder can be exported by the following steps:

1. Select a resource folder in configuration tree, and select "export folder" in the right menu.
2. Pop up "Browse folders" dialog, select folder path.
3. Click "Yes", pop up "resource folder export successful" dialog.
4. Click "Yes" to complete the export. resource folder.

By default, the exported resource folder is named by its type, for example, the graphics resource folder will be named as "Graphics ". And the configured resource files are included in the exported resource folder.

6.10.2 Import Resource Folder

Resource folder can be imported to operation team configuration by the following steps:

1. Select a resource folder in configuration tree, and select "Import Folder" in its right menu.
2. Pop up "Browse Folders" dialog, select the folder path.
3. Click "Yes", pop up "resource folder import successful" dialog.
4. Click "Yes" to complete the import. resource folder.

After imported resource folder, resource files in the folder will be imported to operation team at the same time.

Section 7 Configuration Publish

Saved the supervision configuration to the configuration server and publish the configuration. Otherwise, the change of configuration cannot be displayed in supervision.

Please refer to relevant contents in *Config Explorer User Manual* for specific operation process and notes for application.

Section 8 Other Functions

8.1 Reuse Configuration of Operation Team

The configuration of overview, data viewer, tuning group window, trend window, graphics and tag associated trend window can be reused by importing and exporting as CSV file. Tag associated graphics can be exported as CSV file.

In default, the exported CSV files of configurations in operation team are:

- Exported CSV file of overview configuration is "TotalView.csv".
- Exported CSV file of data viewer configuration is "OverView.csv".
- Exported CSV file of trend window configuration is "Trend.csv".
- Exported CSV file of graphics configuration is "Graphics.csv".
- Exported CSV file of tag associated trend window configuration is "TagToTrend.csv".
- Exported CSV file of tag associated graphics window configuration is "TagToGraph.csv".

This section takes trend window as an example to introduce the import/export of operation team configuration.

8.1.1 Export Operation Team Configuration

Operation team configuration can be exported as CSV file, in which user can modify the configuration information in batch, or import it to another operation team directly, to reuse the configuration.

Steps to export operation team configuration:

1. Right-click "Trend" in configuration tree and select "Export".
2. Pop up the "Save As" dialog and select the CSV file name and path.
3. Click "Save" to complete the operation.

8.1.2 Import Operation Team Configuration

Operation team configuration can be imported as CSV file, operation steps are shown below:

1. Right-click "Trend" in configuration tree and select "Import".
2. A prompt of "Import to replace current configuration, continue?" will pop up, click "Yes".
3. Pop up the "Open" dialog, select the CSV file name and path.
4. Click "Open" to complete the operation.

8.2 Export Tag Usage Information

Information of tag in operation domain can be exported as CSV file to view the usage information of tag conveniently, including tag name, tag type, control station address of tag, tag group and associated graphics.

The tag related information can be filtered by the control domain, control station and tag type of tag when exporting. Operation steps are shown below:

1. Select menu commands **Operation/ Export Tag Usage Information** in VFHMICfg, to pop up the “Export Tag Related Information Filter” dialog.

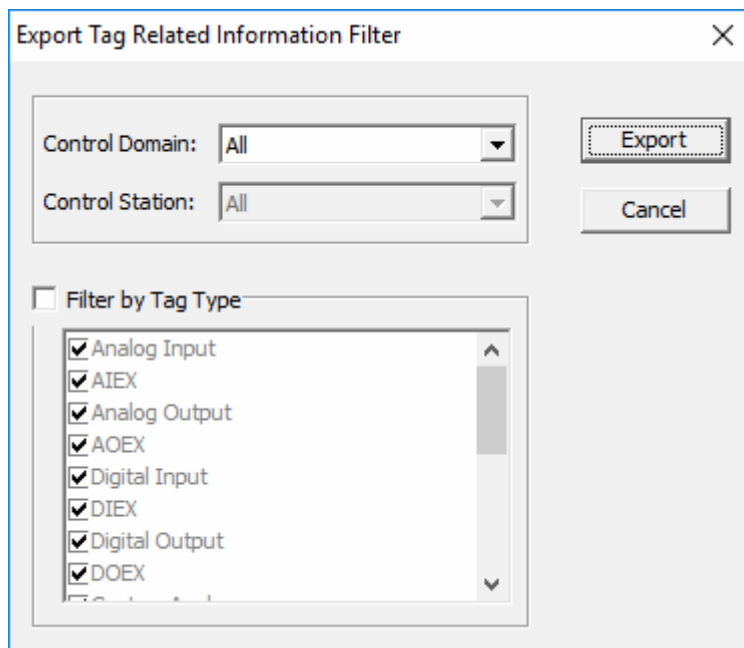


Figure 8-1 Export Tag Related Information Filter

2. Set the filter conditions for exporting in “Control Domain”, “Control Station” and “Filter by Tag Type”.
3. Click “Export”, and select the file name and path in the pop-up dialog, and complete the exporting of tag related information.

In default, the tag usage information exported file is “TagUseInfo.csv”, which includes “Tag Name”, “Tag Type”, “CS Addr.”, “Tag Group” and “Graphic”, as shown below.

A1												
	Tag Name	Tag Type	CS Addr	Tag Group	Graphic							
2	ARR_REAL	Custom An	[0.2]	0								
3	ARR_UINT	Custom Int	[0.2]	0								
4	AI0002000	Analog Inpu	[0.2]	0								
5	AI0002000	Analog Inpu	[0.2]	0								
6	AI0002000	Analog Inpu	[0.2]	0								
7	AI0002000	Analog Inpu	[0.2]	0								
8	AI0002000	Analog Inpu	[0.2]	0								
9	AI0002000	Analog Inpu	[0.2]	0								
10	AI0002000	Analog Inpu	[0.2]	0								
11	AI0002000	Analog Inpu	[0.2]	0								
12	AI0002001	Analog Inpu	[0.2]	0								
13	AI0002001	Analog Inpu	[0.2]	0								
14	AI0002001	Analog Inpu	[0.2]	0								
15	AI0002001	Analog Inpu	[0.2]	0								
16	AI0002001	Analog Inpu	[0.2]	0								
17	AI0002002	Analog Inpu	[0.2]	0								
18	AI0002002	Analog Inpu	[0.2]	0								
19	AI0002002	Analog Inpu	[0.2]	0								
20	AI0002002	Analog Inpu	[0.2]	0								
21	AI0002002	Analog Inpu	[0.2]	0								
22	AI0002002	Analog Inpu	[0.2]	0								
23	AI0002002	Analog Inpu	[0.2]	0								
24	AI0002002	Analog Inpu	[0.2]	0								
25	AI0002002	Analog Inpu	[0.2]	0								

Figure 8-2 Exported tag related information

**Tip:**

- When tag belongs to several graphics, they will be separated by “;”, such as the tag “AI_1_4_1” above.
- Exported graphics has 3 types, pop-up graphics (such as “poppiclabc.pic” above), graphics template (such as “BGTemplateabc.pic” above) and graphics (such as “pic\ENTEST.pic” above).


8.3 Cut and Copy the Configuration Tree Nodes

The function is only available for nodes under operation team (for example, overview, data viewer, tuning group, trend, etc.), and the nodes under domain configuration (for example, alarm color setting, etc.) cannot be cut or copied.

The source node and the target node should be matched, for example, page nodes of overview window can be copied to overview window under other operation teams (or overview windows under the same operation team); however, they can't be copied to data viewer window.

Operations (Example):

Copy and paste nodes of an operation team

Select the node of "Unit1" and click the icon  in the toolbar (or select **Edit/Copy** in the menu bar or use shortcut key "Ctrl+C").

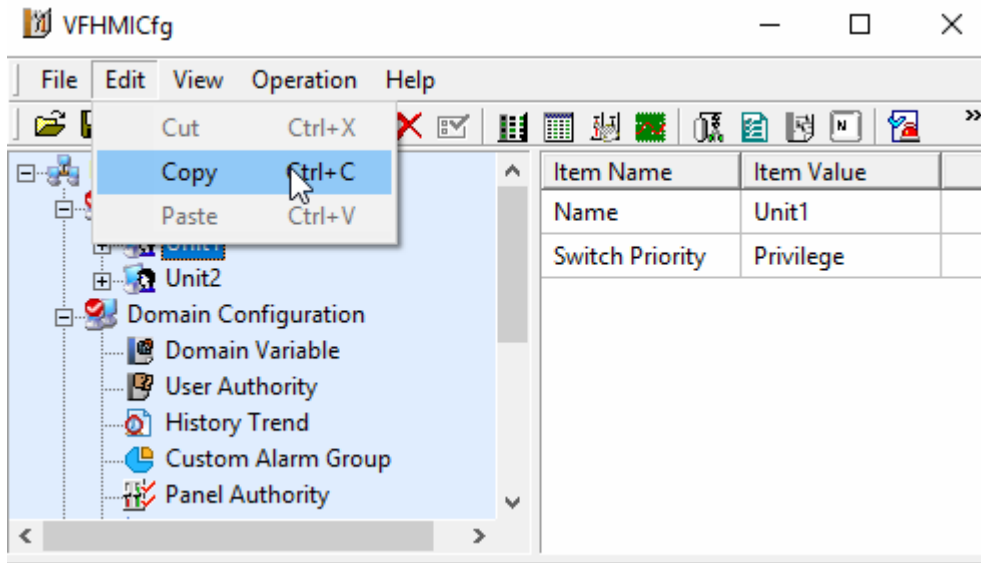



Figure 8-3 Copy an Operation Team by Menu

Select "Operation team" and click the icon  in the toolbar (or select **Edit/Paste** in the menu bar or use shortcut key "Ctrl+V").

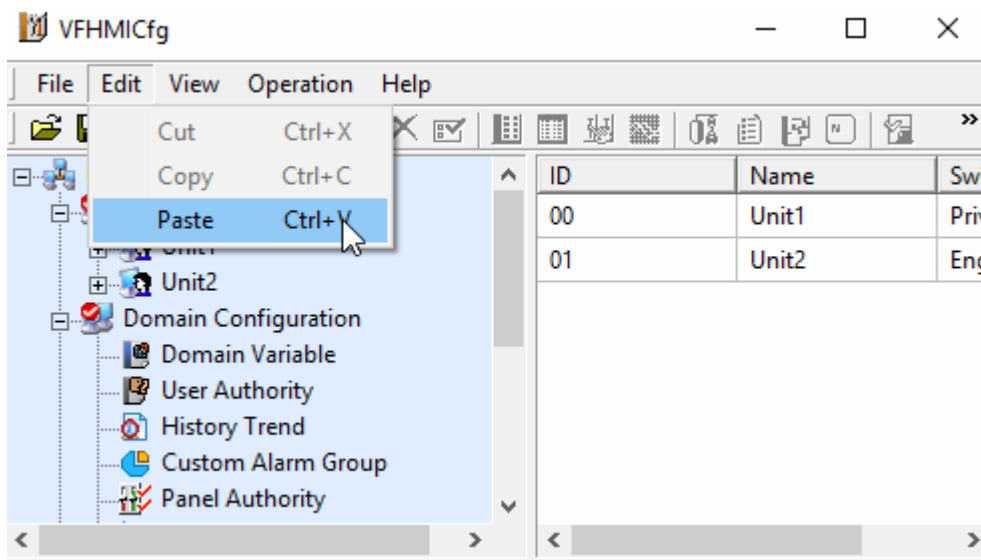


Figure 8-4 Paste an Operation Team by Menu

All configurations of the new operation team Team0001 are the same as those of the "Unit1", except the name.

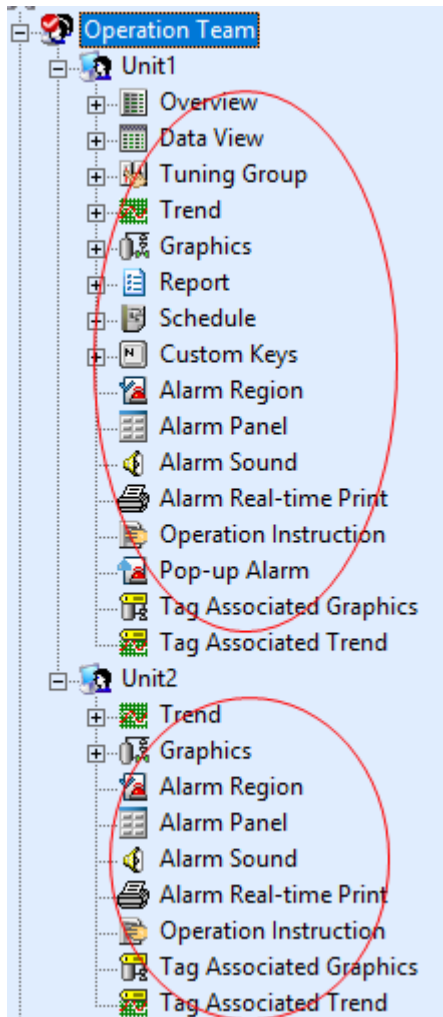


Figure 8-5 The Pasted Operation Team

The operation of Cut is the same as Copy, and will not be stated.

Copy and cut of multi-page

Several nodes cannot be selected simultaneously in the configuration tree, but users can cut or copy several nodes of pages simultaneously by list control at the right. The example of copying three pages in overview window is illustrated as below.

Select the node of "Overview" under the "Unit1" and select "Water System", "Air System" and "Temperature" simultaneously in the list control at the right.

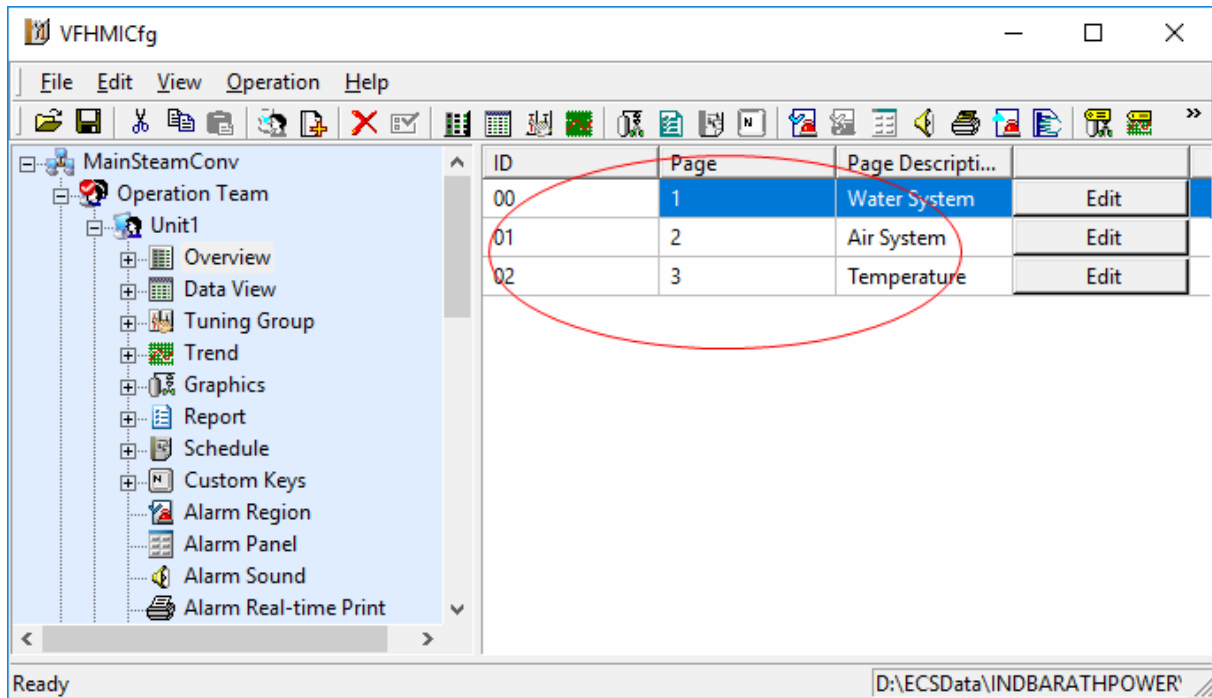



Figure 8-6 Select Three Overview Windows

Click the icon  in the toolbar (or select **Edit/Copy** in the menu bar or use short key "Ctrl+C").

Select the nodes of "Unit1", and click the icon  in the toolbar (or select "Edit/Paste" in the menu bar or use shortcut key "Ctrl+V"), and then three overview windows are pasted to "Overview" under the operation team. Both the names and contents of the three overview windows are the same as the copied.

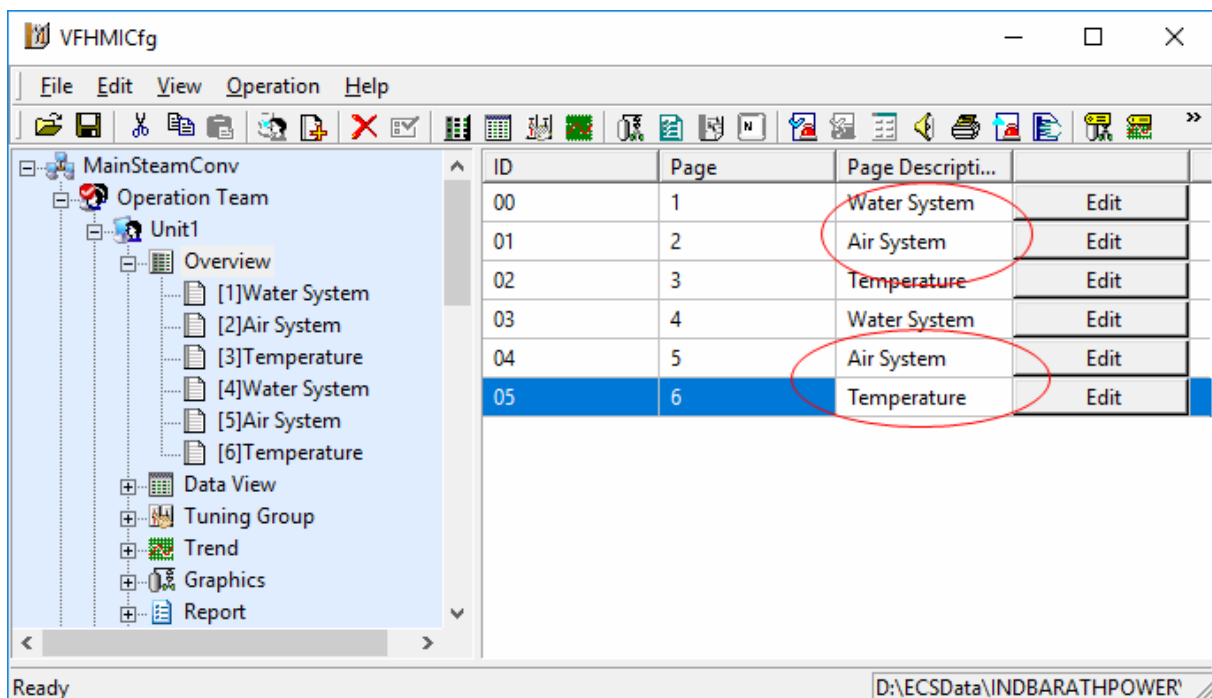



Figure 8-7 Pasted Overview Window

The operation of Cut is the same as Copy, and will not be stated.


Other descriptions about Cut and Copy Operations:

The operation of cut and copy can also be implemented by right-click menu on the configuration tree or in the information display area; the operation of copy can be implemented in the configuration tree by dragging mouse. The cutting operation can be implemented in the configuration tree by pressing "shift" on the keyboard and dragging mouse.

8.4 Delete the Nodes in the Configuration Tree

Nodes in the configuration tree can be deleted by selecting them and clicking "Delete" in the right-click menu (or select the button "Delete"  in the toolbar or **Operation/Delete** in the menu bar).

Nodes in multi-page can be deleted in right information display area, as illustrated with the examples of deleting three pages in overview window.

Select the node of "Overview Window" under "Unit1", and select "Graphics Window Jump", "Trend Window Jump" and "Tuning Group Jump" and click "Delete" in the right-click menu (or select the button "Delete"  or **Operation/Delete**) in the menu bar.

8.5 Show/Hide Toolbar and Status Bar

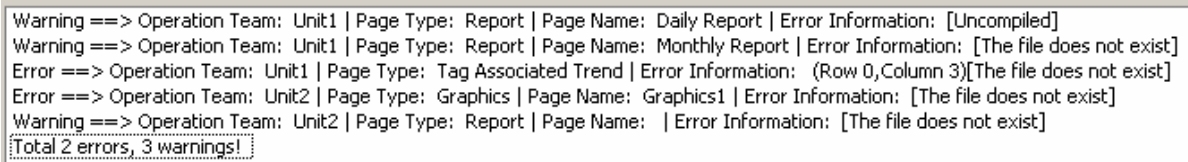
Show or hide the toolbar by **View/Toolbar**; Show or hide the status bar by **View/Status bar**.

8.6 Save and Compile

The function is used to save and check the configuration, including:

- Whether reference tags and reference pages in the overview display exist;
- Whether reference tags in the data viewer window exist;
- Whether reference tags in the tuning group window exist;
- Whether reference tags in the trend window exist;
- Whether reference graphics files of graphics page exist;
- Whether reference tags of report exist;
- Whether reference tags and reference graphics in the alarm panel exist;
- Whether alarm enable tags of alarm region exist;
- Whether reference tags and reference pages in the customized key-press exist;
- Whether reference tags and reference graphics of tag associated graphics exist;
- Whether reference tags and trend windows of tag associated trend window exist;

Select **File/Save and Compile** and prompt information will be displayed in the output window. If there are problems when compiling, error information will be displayed, as shown in the Figure 8-8.



```
Warning ==> Operation Team: Unit1 | Page Type: Report | Page Name: Daily Report | Error Information: [Uncompiled]
Warning ==> Operation Team: Unit1 | Page Type: Report | Page Name: Monthly Report | Error Information: [The file does not exist]
Error ==> Operation Team: Unit1 | Page Type: Tag Associated Trend | Error Information: (Row 0,Column 3)[The file does not exist]
Error ==> Operation Team: Unit2 | Page Type: Graphics | Page Name: Graphics1 | Error Information: [The file does not exist]
Warning ==> Operation Team: Unit2 | Page Type: Report | Page Name: | Error Information: [The file does not exist]
Total 2 errors, 3 warnings!
```

Figure 8-8 Compiling Information

Section 9 Revision

Table 9-1 Retrofit list of the version

Document Version	Applicable software version	Remarks
V1.0 (20230301)	OMC High-performanceHMI V4.70.00.00	First release
V1.1 (20230830)	OMC High-performanceHMI V5.10.00.00-M	Updated screenshots. Added description of maximum tag displayed of trend and adjustment of property column Added description of OMS voice alarm and enabling OMS message Added illustration of custom system alarm Added instruction of exporting device configuration