

DeltaV Training - Hatch

DeltaV Live



Emerson Impact Partner



Agenda

- Overview
- Workstation Management
- Graphics Studio
- DeltaV Live
- GEMs
- Contextual Displays
- Import/Export
- Conversion Tool
- Administration
- Scripting

Overview

DeltaV Live Introduction

DeltaV Live

- Replaces DeltaV Operate
- Exists in DeltaV 14.3 onwards
 - DeltaV Operate to become obsolete in version 17.3
- Nomenclature:

DeltaV Live	DeltaV Operate
GEM (Graphical Elements)	Dynamo
Functions	Lookup Table
Standard	Global Variables
Contextual Displays	Faceplates, Details, Popup Pictures

Overview – New Features

- Graphics Studio
- DeltaV Live
- Class-based GEMs
- Line connectors and arrows
- Crossing lines option
- Display hierarchy
- Themes

Overview - Programs

The screenshot shows the DeltaV Live Administration application window. It is divided into two main sections: General and Database. The General section includes icons for Workstation Management, DeltaV Live Diagnostics, Event Viewer, and SQL Data Sources. The Database section includes icons for Database Server, Show Active Connections, Copy Database, Create Database, Delete Database, Export Database, Import Database, Rename Database, Switch Database, Backup Database, and Restore Database.

The screenshot shows the Graphics Studio application window. The main area displays a DeltaV display of an industrial facility at night with the 'DELTA V' logo overlaid. The interface includes a ribbon menu with tabs for File, Home, Insert, Review, View, and Format. A Graphics Explorer pane on the left shows a tree view of the DeltaV System, including Displays, Display Sets, Contextual Displays, and Layouts. A Palette pane on the right lists various graphical elements like Palettes, SStd, Advanced Control, and Equipment. A Graphics Configuration pane on the far right shows settings for the DeltaV display, including Title, Description, Plant Hierarchy, Size (Width: 20.9 in, Height: 10.42 in), and Background (Library_S_DisBackColor).

Workstation Management

DeltaV Live Options



Workstation Management

- Workstation Management is launched through DeltaV Live Administration
- Workstation Management is used to enable/disable DeltaV Live
 - Can run both DeltaV Operate and DeltaV Live side by side
 - DeltaV Live can be enabled or disabled on all workstations except the ProPlus station
- This tool also allows you to assign layouts, display sets, and themes

The screenshot displays the 'Workstation Management' application window. On the left, a table lists workstations with their status, ID, and type. On the right, the 'General Properties' panel for workstation '1-BH-01' is shown, detailing its configuration options.

DeltaV Live Enabled	Workstations	Type	Host
Off <input checked="" type="checkbox"/> On	1-BH-01	ProfessionalPLUS Station	
Off <input checked="" type="checkbox"/> On	B89F3-OWS-01	Operator Station	

General Properties | Display Set | Themes

1-BH-01
 Type ProfessionalPLUS Station
 Last Modified By ADMIN Date 11-17-2020 09:41 AM
 Last Published By Never Published Date Never Published

DeltaV Live starts in

Using DeltaV Live only

FlexLock Settings

- Autoswitch Desktop
- Autorun DeltaV Live
- DeltaV Autologon
- Smart Card Required

Ctrl+Alt+Del Screen Local Policy State

Remove Change Password

Remove Lock Computer

Using both DeltaV Operate and DeltaV Live

Select a layout for this workstation.

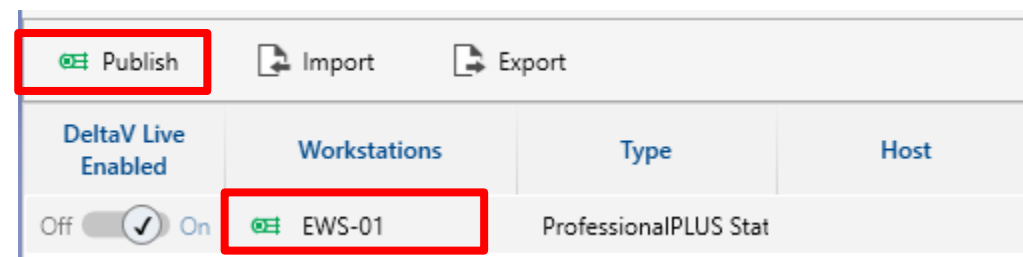
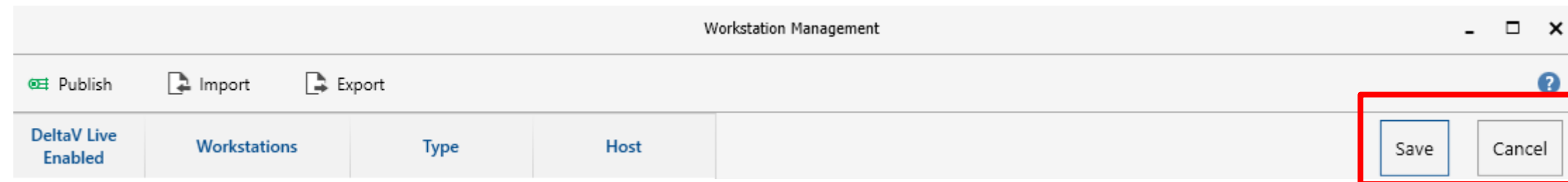
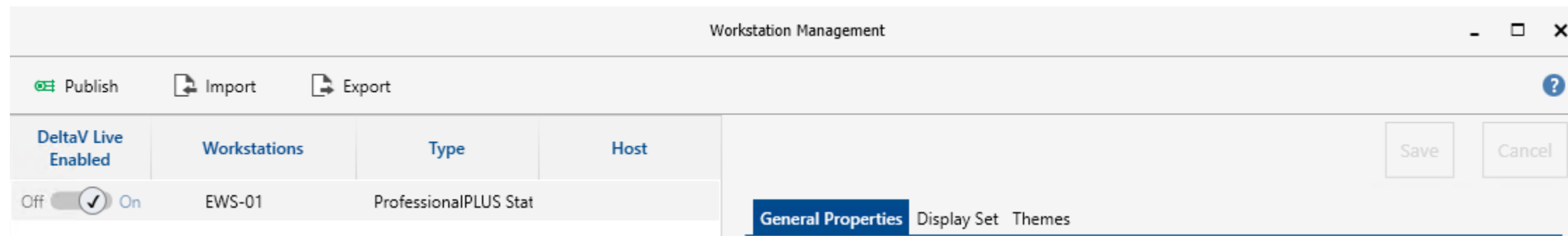
Layout

Workstation Management

- Flexlock settings for DeltaV Live can be configured through this tool
 - NOTE: The location of the Flexlock settings depends on the DeltaV Graphics configuration selected (DeltaV Live or DeltaV Operate)
- The Display Set tab allows the user to assign specific Display Sets to each workstation
 - Display Sets will first need to be created in Graphics Studio
 - Used to assign specific graphics to specific workstations
- The Themes tab allows the user to assign the themes that are enabled for the workstation.
 - Default Themes: Silver, Dark Blue, Dark Grey, Light Blue, Tan

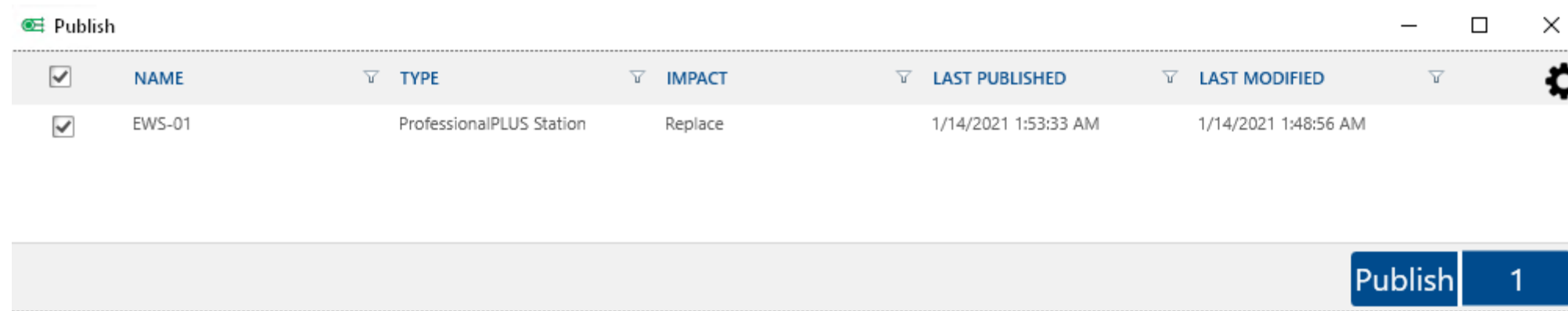
Workstation Management

- Saving and Publishing in DeltaV Live is similar to Saving and Downloading in DeltaV Explorer.
 - The publish icon will appear next to workstations when they need to be Published.



Workstation Management

- Once you hit publish, a popup window with all of the workstations that need publishing will appear. The user can select which workstations they want to publish instead of publishing all of them at once.



Counts how many items will be published

Graphics Studio

DeltaV Graphics Configuration



Graphics Studio

- DeltaV Operate used two instances of Operate to configure and display graphics:
 - DeltaV Operate Configure
 - DeltaV Operate Run
- The two programs could not run side by side. You had to switch from one to the other to test graphics.
- DeltaV Live has a dedicated graphics editor: Graphics Studio
- DeltaV Live and Graphics Studio can run together, and multiple instances of Graphics Studio can be open simultaneously.

Graphics Studio

1: Ribbon

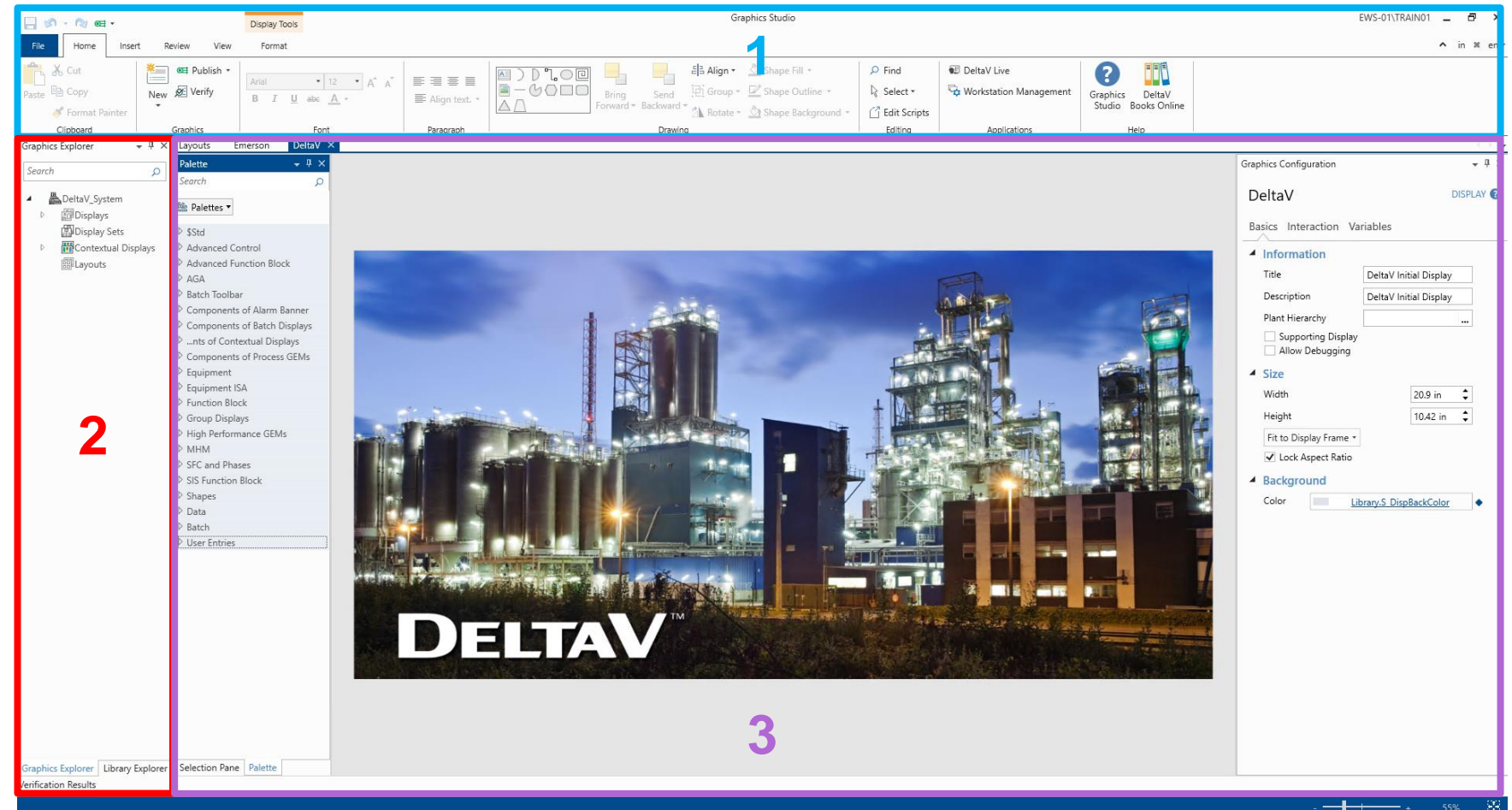
- Contains menu bar with access to commonly used commands and tasks

2: Explorer Pane (2 tabs)

- Used to managed DeltaV Live configuration databases – two tabs: Library Explorer and Graphics Explorer

3: Display/Documents Workspace

- Where you can view and edit selected configuration
- Tabs: Palette Pane, Selection Pane, Graphics Configuration Pane, Content Pane



Graphics Studio - Workshop

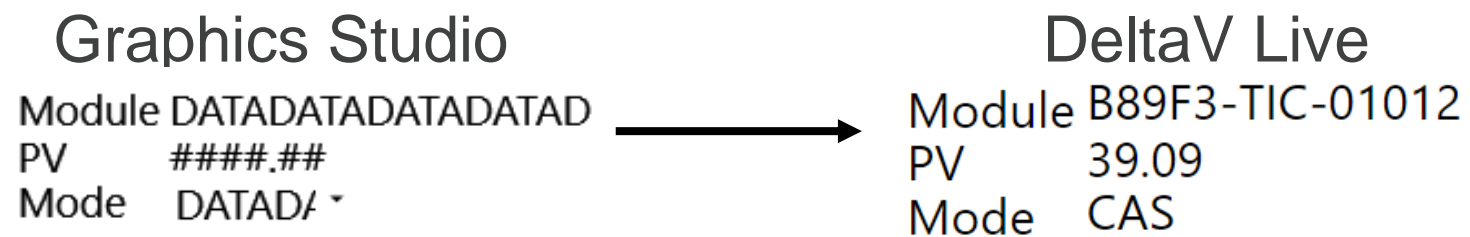
- Create new display folder and display
- Go through the different tabs on the ribbon
- Examine the selections available in the panes and how to use them
- Customize panes:
 - Reorder
 - Float
 - Dock
 - Hide

Graphics Studio

- **Parameter Path** notation is: *Data Server["Module/Block/Parameter.Field"]*
Example: DLSYS["MTR-102/DC1/SP_D.CV"]
- **Data Server:** Workstation's data server that provides data to DeltaV Operate.
- **Control Module:** Control algorithm that links conditions, alarms, displays, and other characteristics together for specific equipment
- **Function Block:** Contains standard process control algorithm such as PID, AI, AO, DI, etc. Multiple function blocks form a control module
- **Parameter:** Data transmitted between function blocks
- **Field:** Commonly Current Value (CV) and Status (ST)

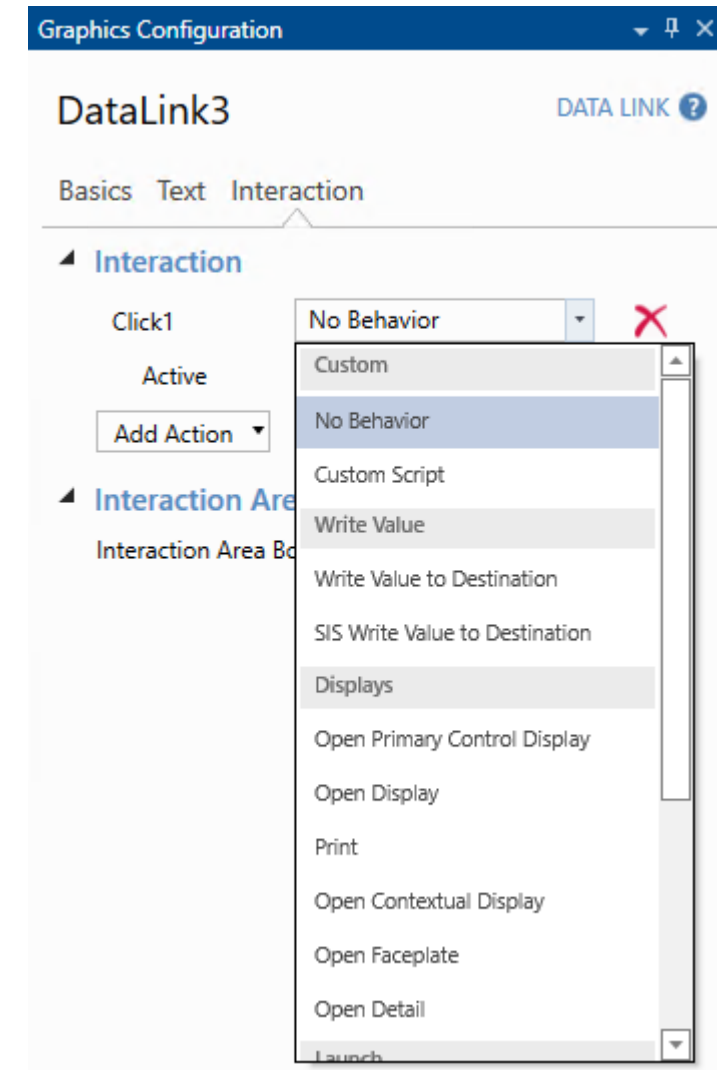
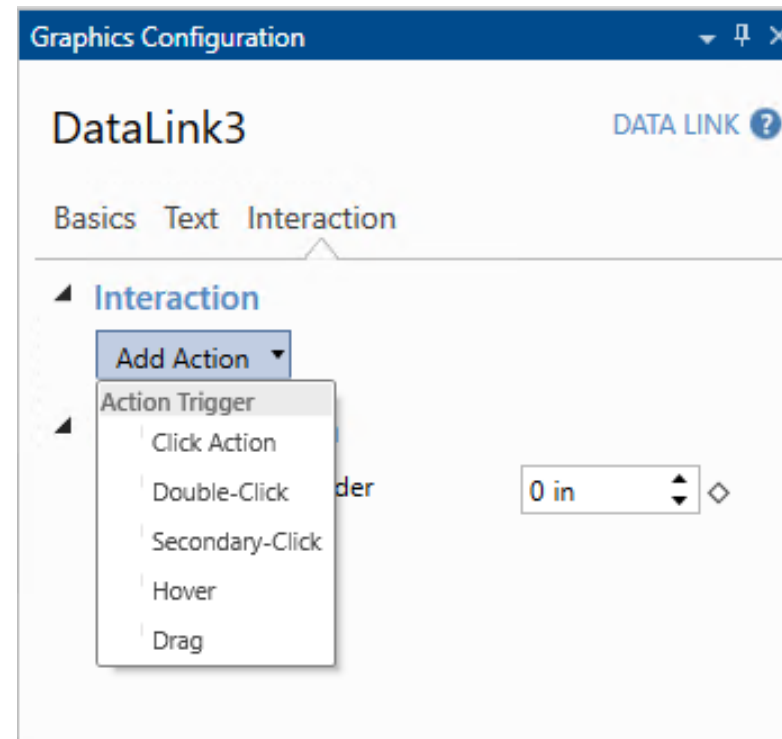
Graphics Studio – Data Link

- Data Links can be added to the graphics to display the value from a module on the graphic
- 3 Main types: String, Numeric, Modes
- Datalinks can allow write input



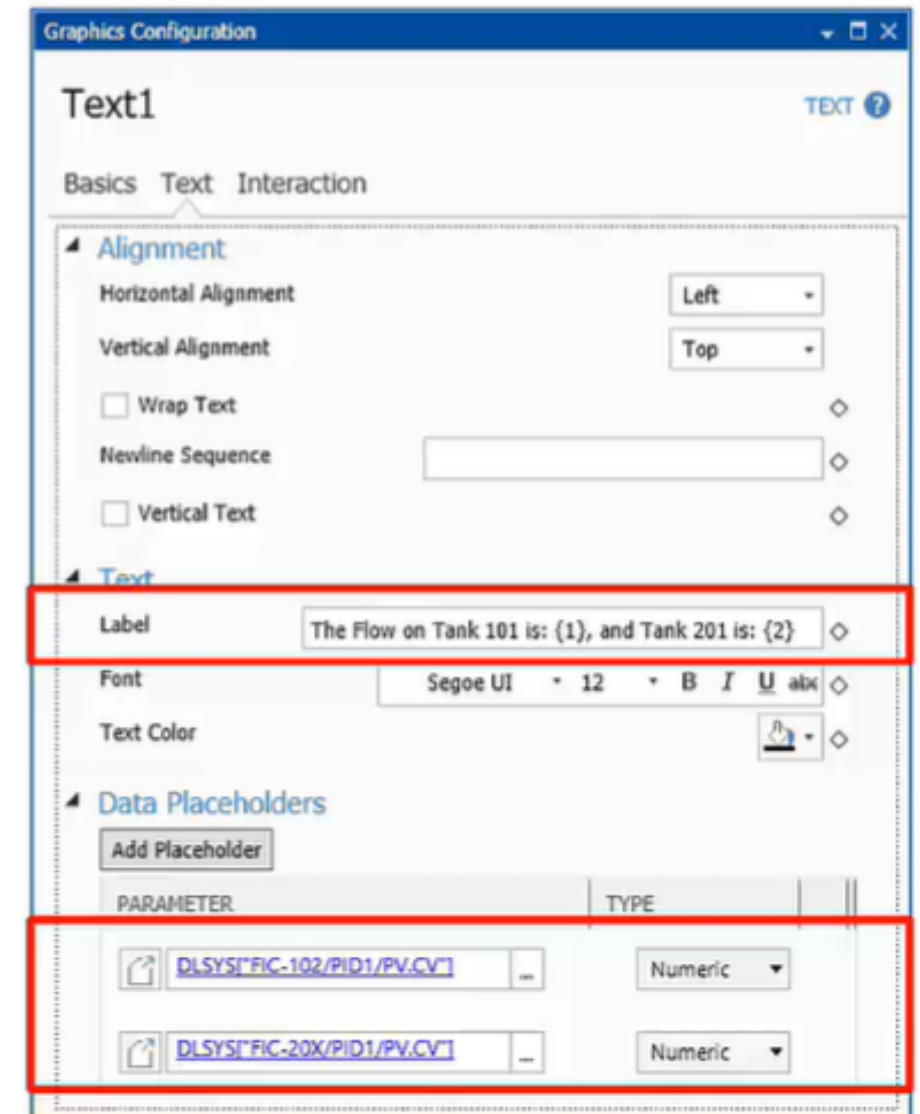
Graphics Studio – Interactions

- Interactions are actions that occur when the user interacts with the specific object.
- There are 5 types of interactions:
 - Click
 - Double Click
 - Secondary Click (Right Click)
 - Hover
 - Drag



Graphics Studio – Data Placeholder

- Live data can be added to a text string by using a Data Placeholder. This will embed a parameter into the text string where the user desires.
- To use this, a data placeholder is assigned, and a {#} is added to the text string where the live data should appear, where # is the placeholder number.
- Example:
 - **Label:** The Flow on Tank 101 is: {1}, and Tank 201 is: {2}
 - **Graphic Studio:** The Flow on Tank 101 is: #####.#, and Tank 201 is: #####.#
 - **DeltaV Live:** The Flow on Tank 101 is: 28.7, and Tank 201 is: 50.3



Graphics Studio – Operators

Operator	Description	Example
>	Greater Than	$(5 > 3) \rightarrow \text{True}$
<	Lesser Than	$(3 < 5) \rightarrow \text{True}$
>=	Greater Than or Equal to	$(5 >= 3) \rightarrow \text{True}$
<=	Lesser Than or Equal to	$(3 <= 5) \rightarrow \text{True}$
==	Equal	$0 == \text{false} \rightarrow \text{True}$
===	Strict Equal	$0 === \text{false} \rightarrow \text{False (Type mismatch)}$
!=	Not Equal	$(5 != 3) \rightarrow \text{True}$
!==	Strict not Equal	$(5 !== 3) \rightarrow \text{True}$

Graphics Studio – Workshop

- Create a new graphic with the following texts and datalinks:
 - Datalinks can be added from the palette pane under “Data”
- Test out a data placeholder
 - Text can be added from “Shapes” in the Palette pane or the Drawing section in the ribbon bar

```

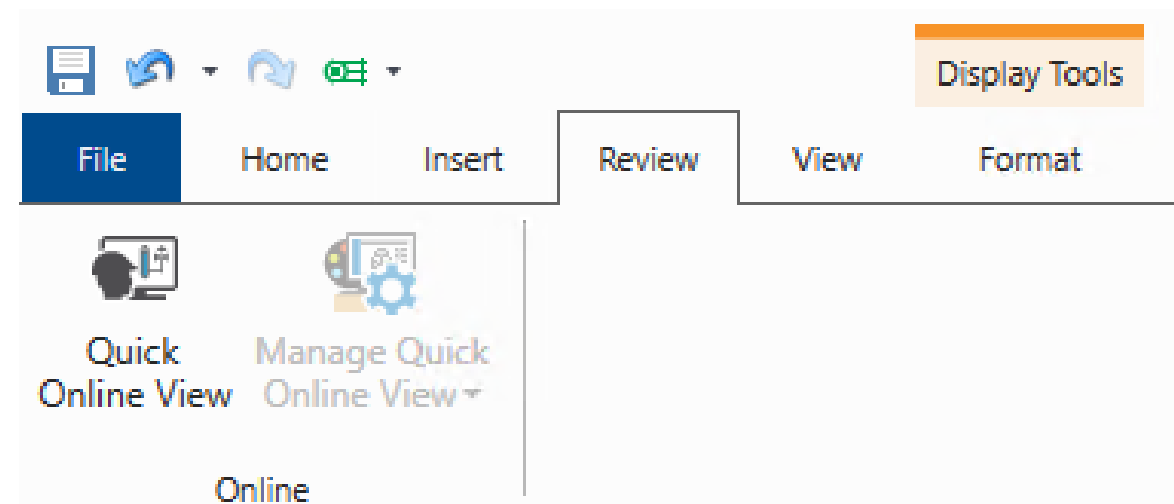
DATADATA
  SP: #####.##
  PV: #####.##
  OUT: #####.##
  MODE: DATAD ▾

```

Parameter	Functionality	Type
Tag Name	Open Faceplate	String
SP	Data Entry	Numeric
PV	No Data Entry	Numeric
OUT	Data Entry	Numeric
MODE	Data Entry	Mode

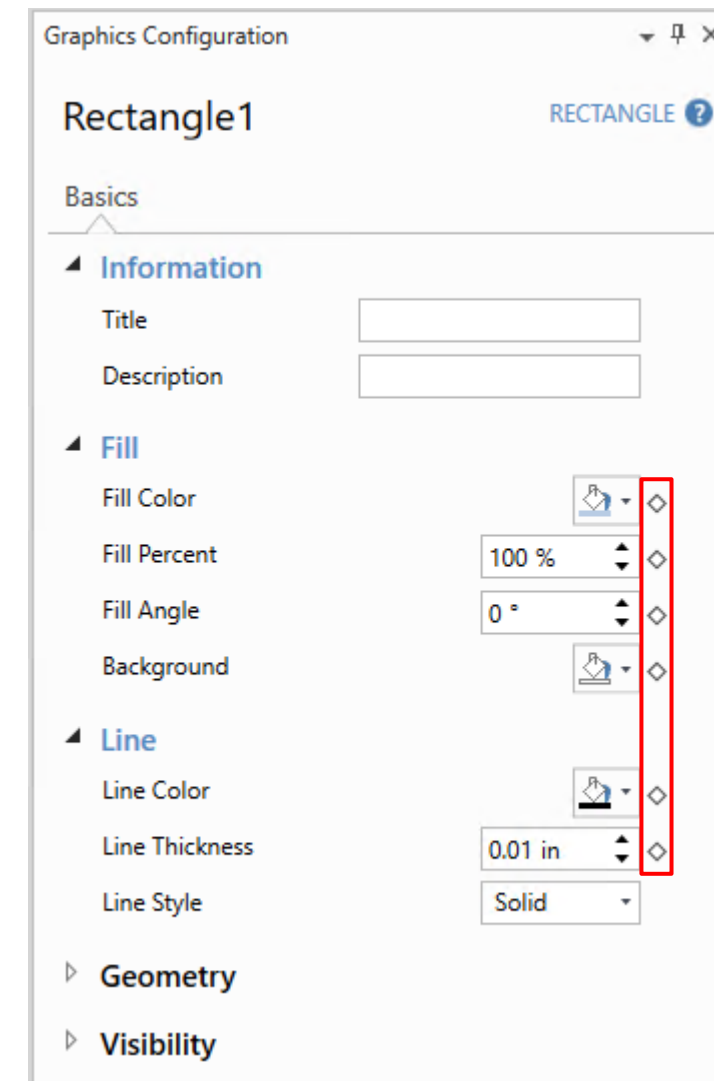
Graphics Studio – Quick Online View

- The Quick Online View tool is located under the Review tab in the ribbon bar in Graphics Studio
- It allows the user to quickly view the graphic without publishing it and using DeltaV Live
- Notes:
 - Limitations exist in Quick Online View – for example, faceplates do not work
 - Any changes made to parameters in Quick Online View will affect real values. This is **NOT** a simulated environment



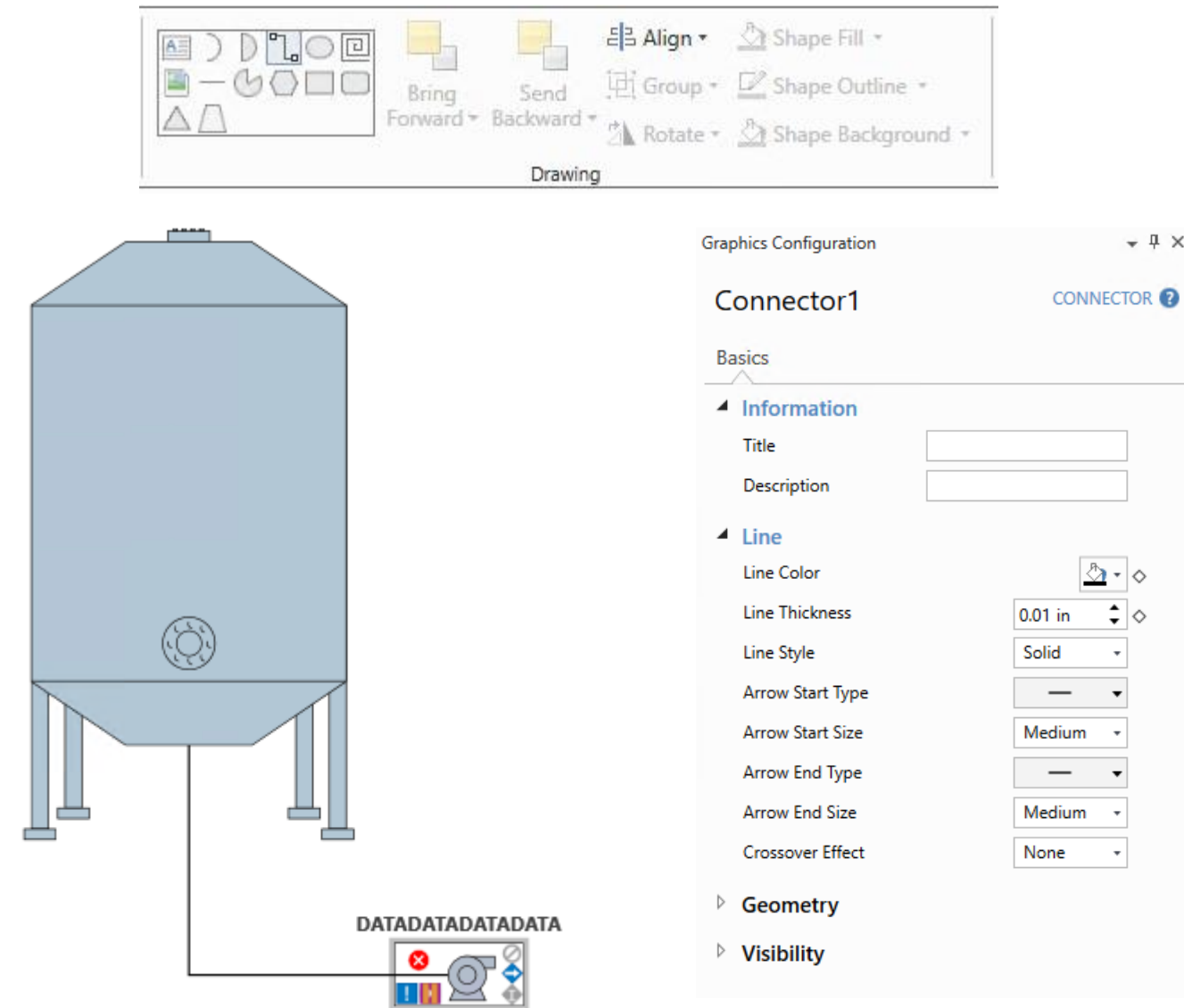
Graphics Studio – Animations

- Animations can be added to graphics to change a property of an object based on a parameter's value. To add an animation, select the diamond icon next to a property in the Graphics Configuration pane.
- This can be useful for animating increasing levels in a tank by animating the vertical fill of a rectangle or changing the colour of an item based on the value.
- Test out this feature by adding an animation to a rectangle to simulate increasing level in a tank and specify the Fill and Scale parameters for the animation.



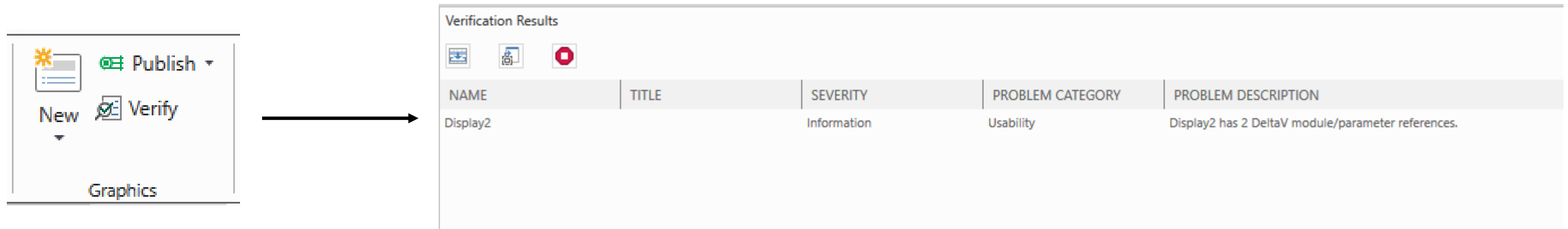
Graphical Elements – Connectors

- DeltaV Graphics Studio allows the user to connect equipment by using the connector tool
- Most preconfigured shapes and GEMs have connection anchor points to allow the user to connect the line to predetermined spots



Graphics Studio – Verification

- The Verification Tool is a useful feature in DeltaV Live that allows you to parse the graphic for issues before publishing.
- This tool will show the issues categorized as Error, Warning, or Information based on how critical the issue is.
- The verification results will show any issues along with their severity.



The image shows a transition from the Graphics Studio interface to the Verification Results window. On the left, a 'Graphics' menu is open, showing options like 'New', 'Verify', and 'Publish'. An arrow points to the 'Verification Results' window on the right, which displays a table of issues.

NAME	TITLE	SEVERITY	PROBLEM CATEGORY	PROBLEM DESCRIPTION
Display2		Information	Usability	Display2 has 2 DeltaV module/parameter references.

Graphics Studio – Publishing

- Publishing displays when using DeltaV Live allows the user to individually update certain displays as opposed to downloading the entire Operator Station in DeltaV Operate. This eliminates the need for the Operator Station to be “locked” for the duration of the download
- The operator can publish a display to a workstation even if it is offline. It will update and use the new published display when it is back online
- Displays can also be easily deleted without worrying about it returning like in DeltaV Operate
- There is an option for targeted publishing where a display is published only to specific workstations. At any one point there can only be a maximum of two revisions for a specific display

Graphics Studio – Publishing

- When created or modified, the following configurations must be published to update:
 - DeltaV Live enabled workstations
 - Languages
 - Themes
 - Displays
 - Display Sets
 - Contextual Displays
 - Layouts
 - Standards
 - Functions

DeltaV Live

DeltaV Online View

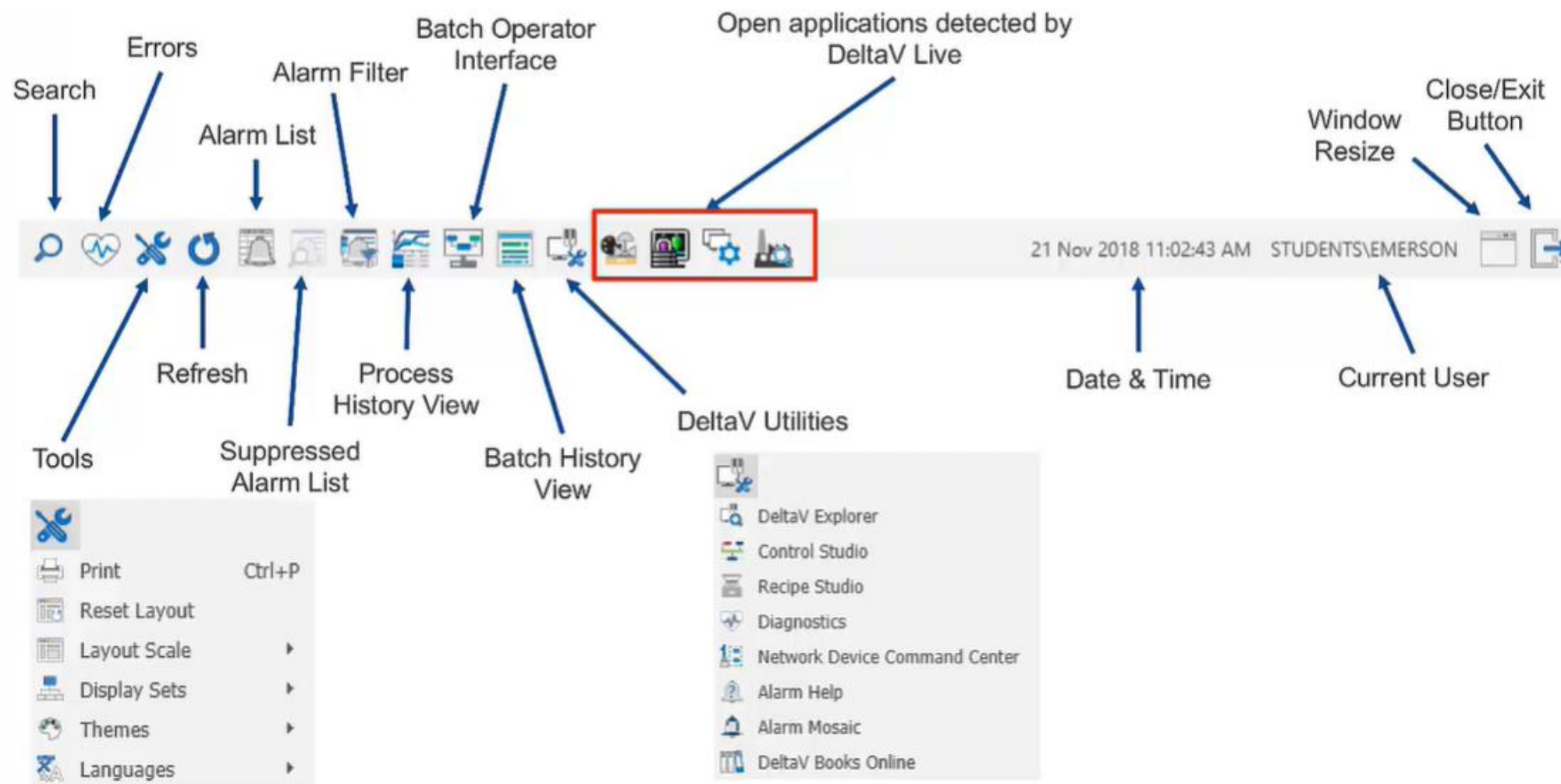


DeltaV Live

- DeltaV Live uses vector displays – this allows the user to zoom in or rescale without loss of quality
- DeltaV Live has many features built in removing the need for the user to depend on scripting to accomplish those tasks
 - Display levels
 - Screen real estate distribution and assignment
 - Coordinated display navigation
 - Areas of responsibility per user

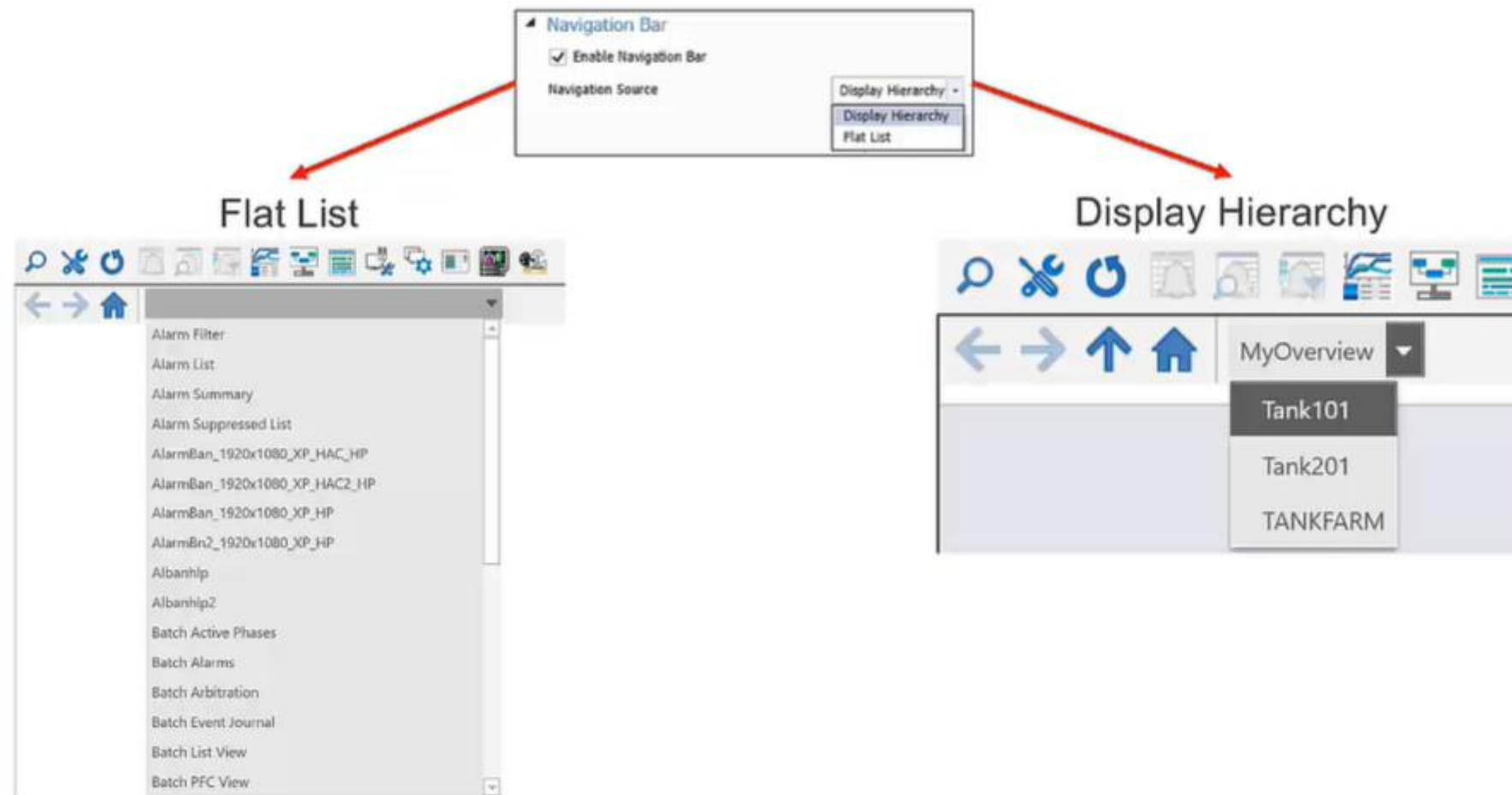
DeltaV Live – Menu Bar

- The menu bar replaces the toolbar in DeltaV Operate. It gives the operator access to tools and applications in DeltaV. The different buttons can be enabled or disabled as desired



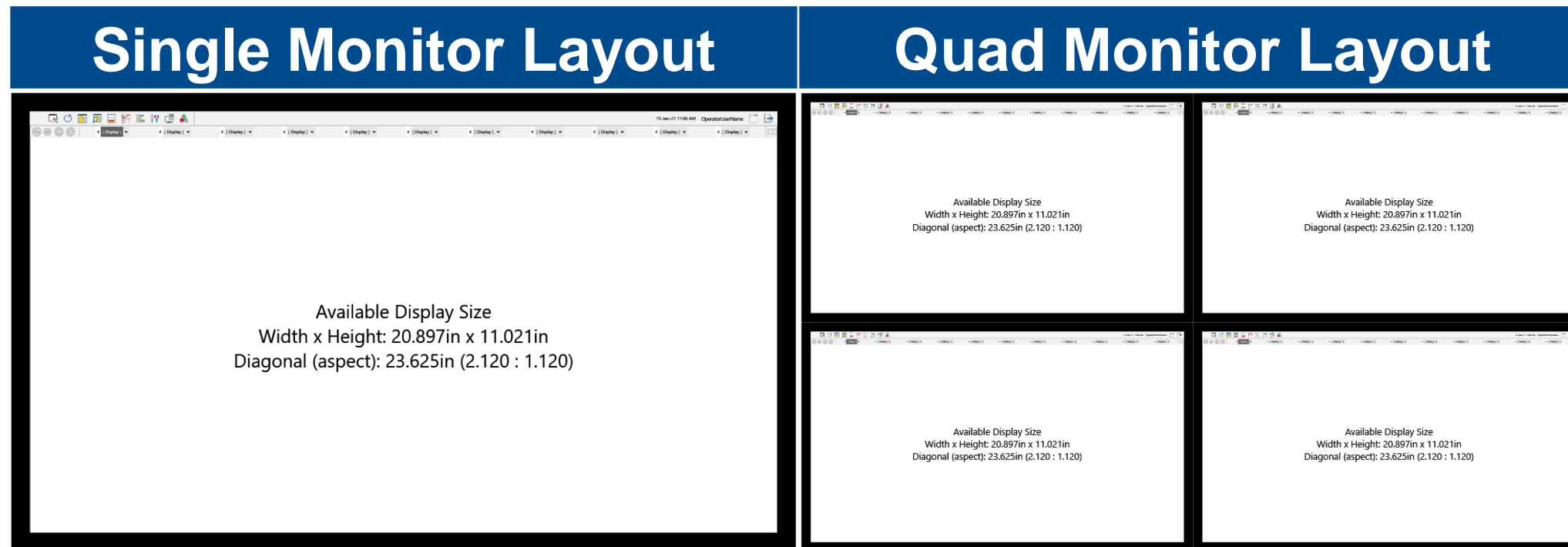
DeltaV Live – Navigation Bar

- The navigation bar allows the user to move to different pages quickly. It can be configured as a flat list (similar to DeltaV Operate) or as a hierarchical list



DeltaV Live – Layouts

- Layouts define where the displays will appear and allow users to arrange and configure the contents of their display
- Single, Dual, and Quad monitor layouts are supported in DeltaV Live
- Multiple displays can be configured on one screen, which is useful for larger monitors



DeltaV Live – Layouts

- Within a layout, screens and display frames can be defined
- Screens are the operator's physical monitor setup (Single, Dual, or Quad Monitors)
- Display frames are the graphical elements shown on the screen



DeltaV Live – Workshop

- Examine the menu bar and navigation bar in DeltaV Live
- Create a new layout
- Create a screen and two display frames (One dynamic and one static)
- Customize the menu bar, navigation bar, and the display frames

DeltaV Live – Display Set

- A display set is a collection of grouped displays for operators to have access to only the relevant displays based on operator's duties
- Multiple displays can be grouped into a display set, and the workstation can be configured to only have access to those displays
- Display sets also provide built in navigation across the displays

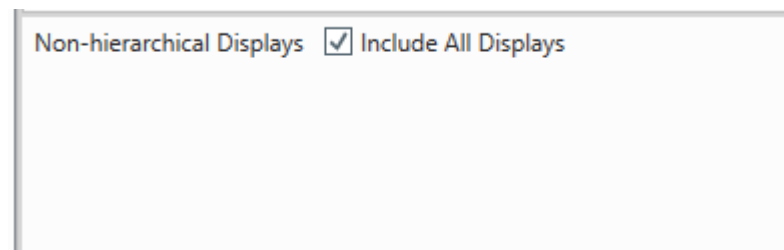
DeltaV Live – Display Set

1. Navigation Hierarchy
2. Preview Pane
3. Non-Hierarchical Displays



DeltaV Live – Non-Hierarchical Displays

- Non-Hierarchical displays can be used to:
 - Collect all the displays that do not belong to a specific group
 - Limit the operator's access to just the desired displays
- Note: Operators can still access other displays if there is an onscreen link or through the alarms banner



Non-Hierarchical displays
section in a Display Set
in Graphics Studio



Available displays in DeltaV Live

DeltaV Live – Workshop

- Create a new display set
 - Display sets are created from the Graphics Explorer
 - Displays can be dragged into the Navigation Hierarchy and Non-hierarchical Displays
- Add Non-Hierarchical displays
 - Must first uncheck “Include All Displays”
- **Confirm alarm list functionality (Advanced – will be discussed in more detail later)**
 - **Add to Non-Hierarchical displays**
 - **Enable Auto-open Display Levels for “Other Displays” under Automatic Display Coordination in the Layout**

DeltaV Live – Hierarchical Displays

- Hierarchical displays can be grouped into 4 levels with level 1 being the overview. Multiple displays can exist at each level
- These are useful for creating a plant wide display set that contains a different hierarchy for each area

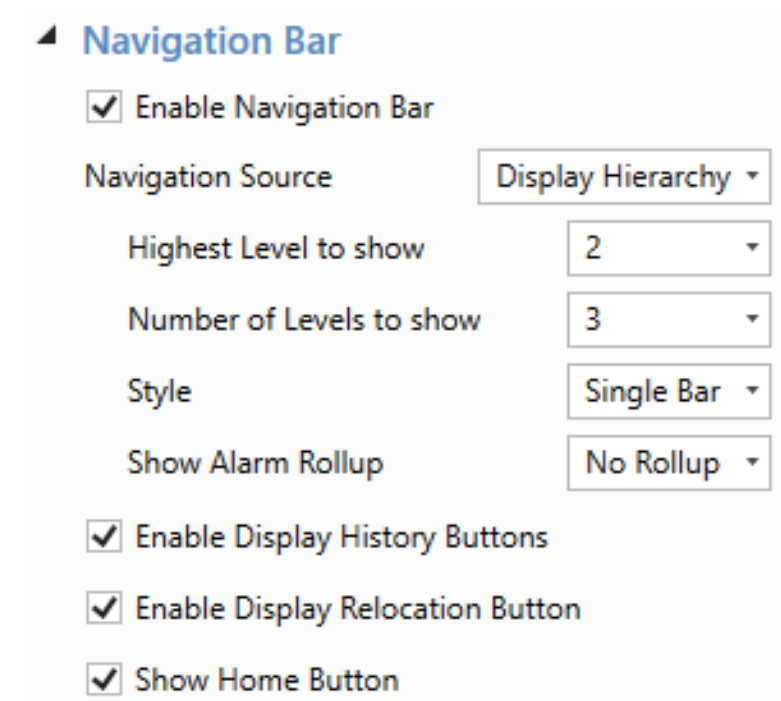
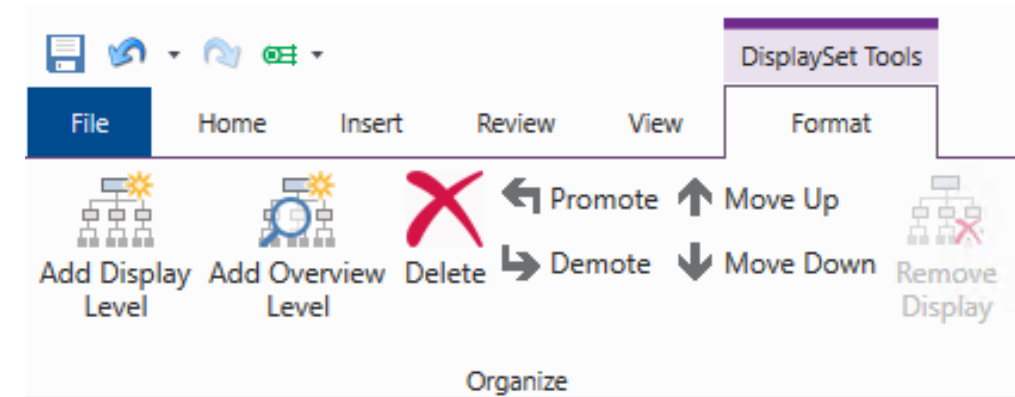


Hierarchical displays section in a Display Set in Graphics Studio

Available displays in DeltaV Live

DeltaV Live – Hierarchical Displays

- A new tab for the hierarchical displays appears to assist in configuring the levels
- When configuring hierarchical displays, the layout will also need to be configured
 - The display hierarchy option will need to be enabled
 - The number of levels can also be configured

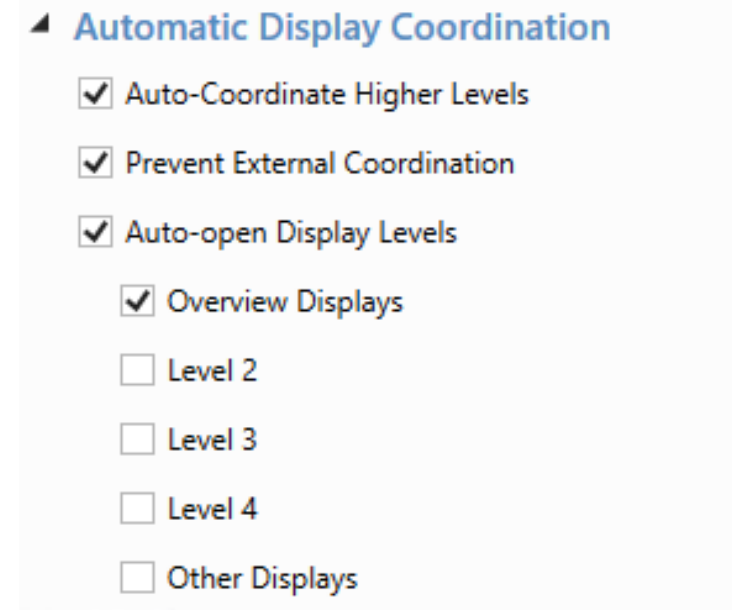


DeltaV Live – Workshop

- Create a new display set
- Add a hierarchical group with Levels 1-4
- Experiment with the different layout selections for the display hierarchy
- Switch between display sets in DeltaV Live
 - Note: Switching from hierarchical display to non-hierarchical display does not change the navigation bar. This needs to be specified in the layout.

DeltaV Live – Automatic Display Coordination

- A layout can be configured to support automatic display coordination, so when a frame opens a level display, other display frames automatically change its content so that displays hierarchically related to each other appear together.
- This allows operators to easily view related content to maintain situational awareness of the plant
- Auto-Coordinate Higher Levels: This frame automatically changes content so that displays hierarchically related to each other appear together
- Prevent External Coordination: Displays opened from this frame's navigation bar open in other display frames
- Auto-open Display Levels: This frame automatically opens displays of the hierarchy level selected



Graphical EleMents

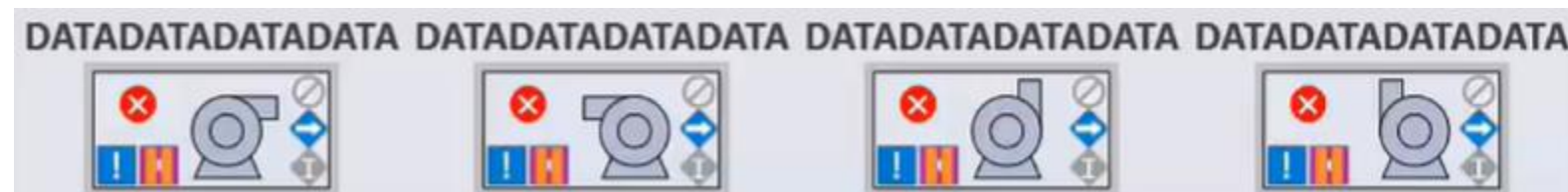
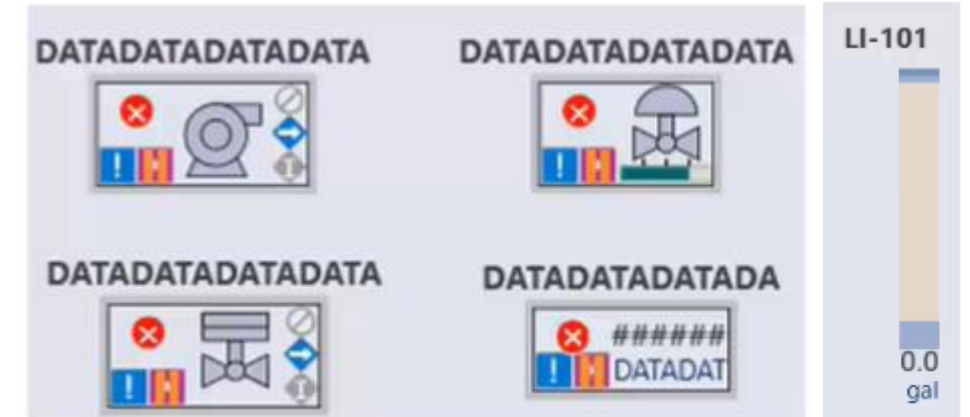
GEMs

Graphical Elements – GEMs








- DeltaV Live's GEMs replace DeltaV Operate's dynamos
- GEM Classes can be created that act like module classes in DeltaV. If a change is made to a GEM class, the change propagates to the GEM modules based on it
- Graphics Studio supports concurrent libraries – a user can have multiple libraries that contain GEMs and other objects with the same name

Graphical Elements – High Performance GEMs

- DeltaV Live includes a set of GEMs called “High performance GEMs”
- High performance GEMs are designed based on Human Centered Design
 - Alarm and status information always present in the same location
 - Utilizes different ways of showing data (like bar graphs instead of data links)
- High performance GEMs exist for equipment such as pumps, analog valves, and discrete valves

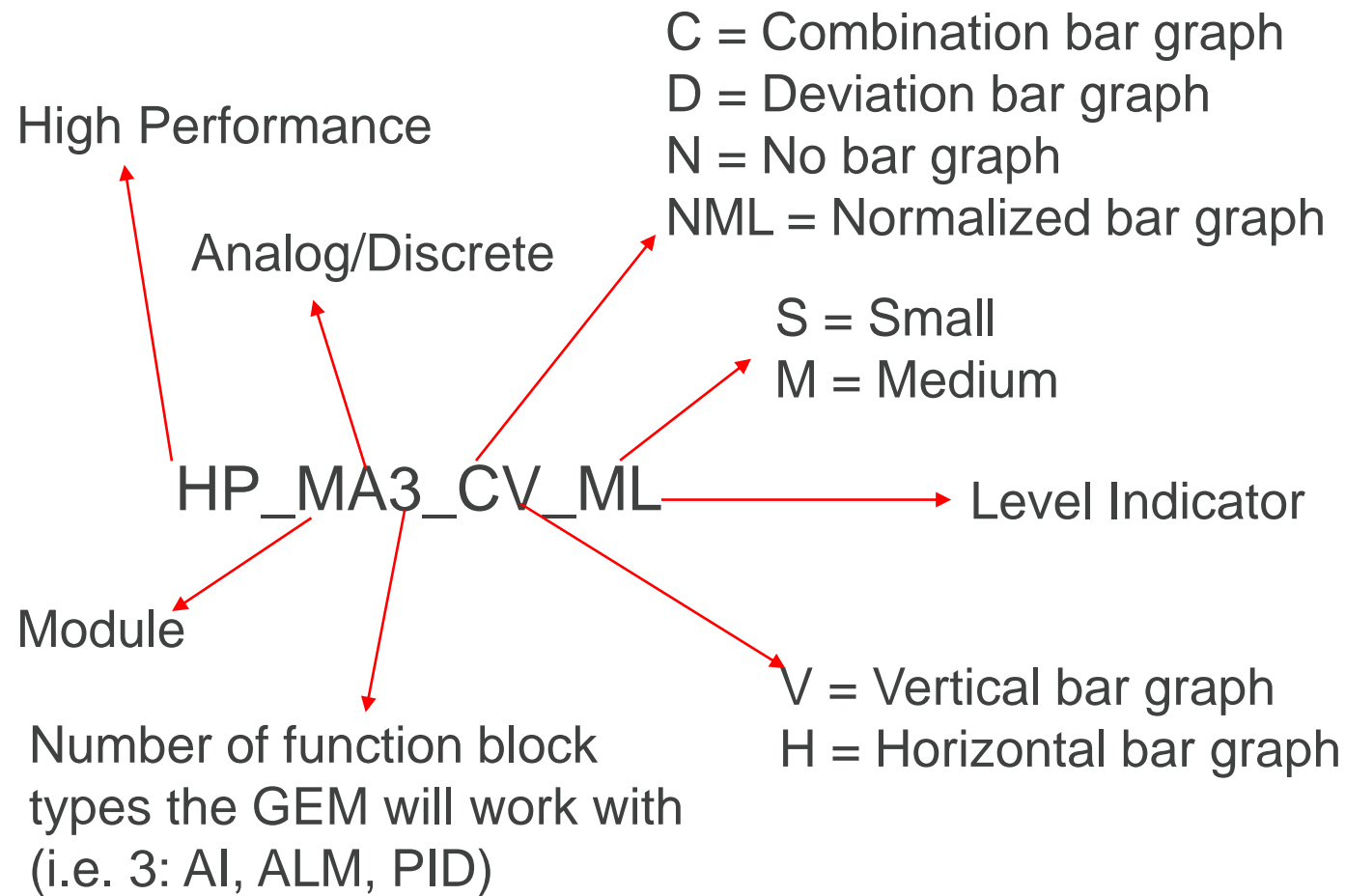


Graphical Elements – GEM Status Icons

Icon	Meaning
Mode 	Indicates the mode of the block is not as expected. For PID block: <i>MODE.ACTUAL</i> ≠ <i>MODE.NORMAL</i> or <i>MODE.TARGET</i> For DC block: <i>MODE.TARGET</i> or <i>MODE.ACTUAL</i> ≠ <i>MODE.NORMAL</i> or <i>Permissive is active</i>
Not Running 	Icon appear when MSTATUS is: Out of Service, Breakpoint Set, Not Running.
Bad IO 	Visible when BLOCK_ERR has: Out of Service, Readback Failed, Output Failure, Input Failure, Other Error. Bad IO icon is never visible when the Not Running icon is visible.
Simulate Active 	Visible when the block is being simulated. Simulate active icon is never visible when Not Running or Bad IO icons are visible.
No Permit 	Visible when a permissive condition is active
Interlock Bypassed 	Visible when BYPASSED parameter is active
Interlocked 	Visible when DC_STATE of the DC block is Shutdown/Interlocked

Graphical Elements – GEM Naming Convention

- The naming convention for GEMs is as follows:

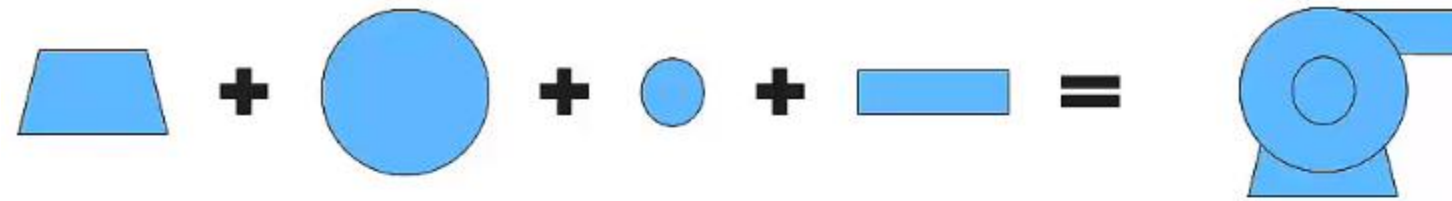


High Performance GEMs			
HP_Alarms	HP_AT_VLV_	HP_B_Valve	HP_C_Valve
HP_EDC_PMP_	HP_EDC_VLV_	HP_HorizAnalog	HP_M1_CH_S_
HP_MA1_CH_	HP_MA1_DH_	HP_MA1_N_	HP_MA1_VLV_
HP_MA2_DH_	HP_MA2_DV_M_	HP_MA2_DV_S_	HP_MA3_CH_
HP_MA3_CV_M_	HP_MA3_CV_ML_	HP_MA3_CV_S_	HP_MA3_CV_SL_
HP_MA3_N_	HP_MD1_PMP_	HP_MD1_VLV_	HP_MSHDI_
HP_MSHDO_	HP_Numeric	HP_Pump	HP_VertAnalog

PMP = Pump
VLV = Valve

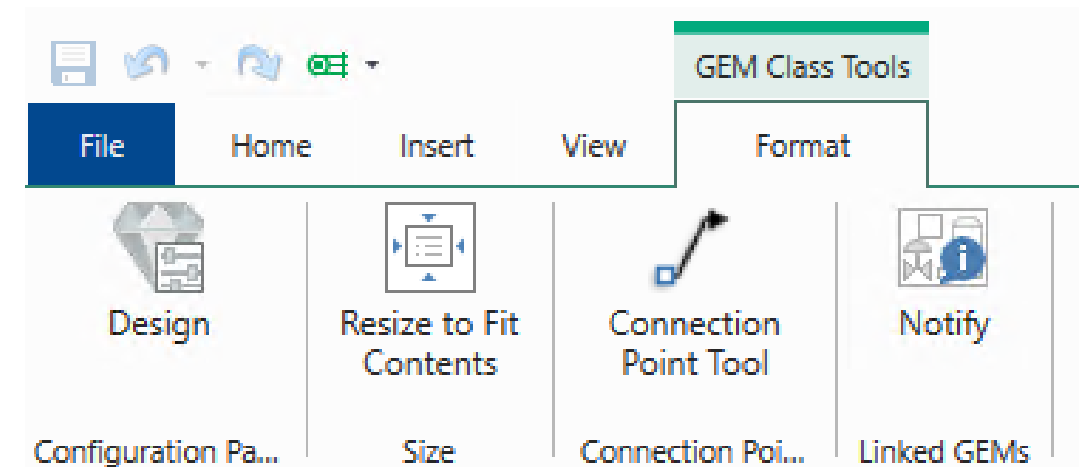
Graphical Elements – GEMs

- To create a GEM from scratch, the user can use a combination of shapes, datalinks, text, and functions:



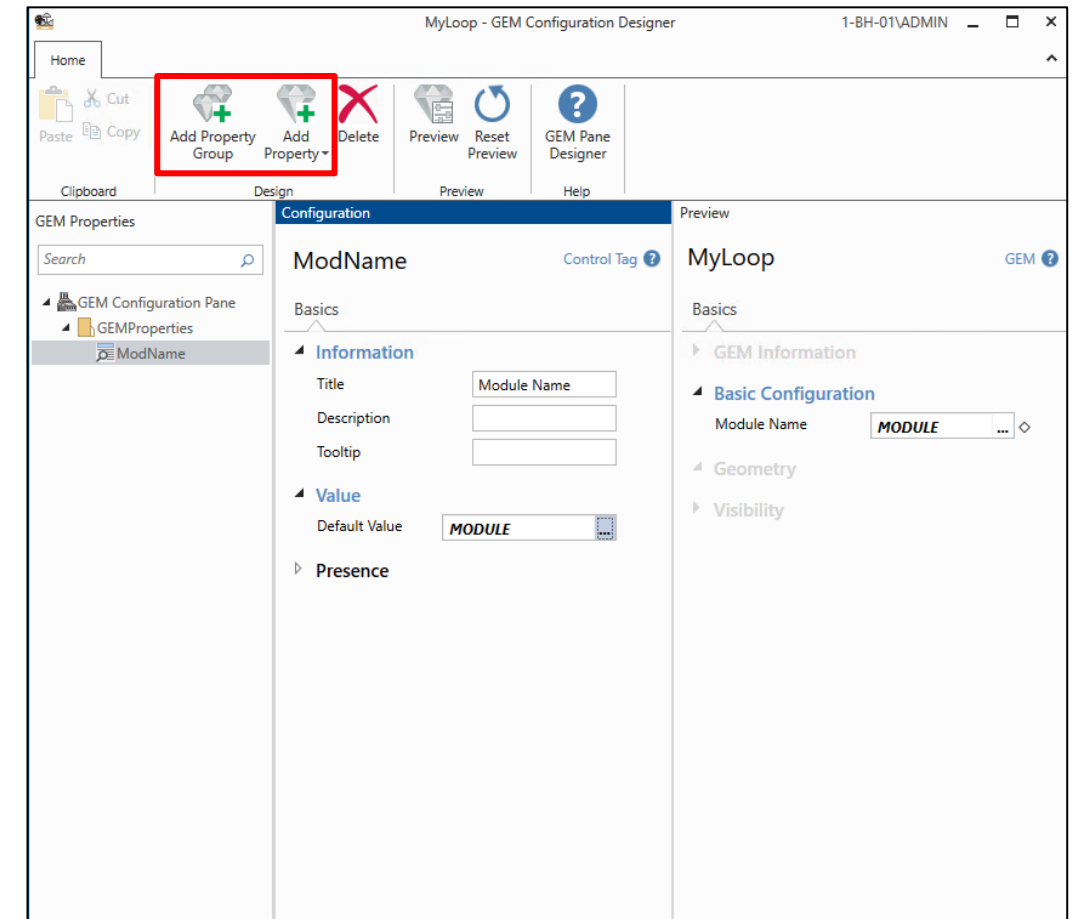
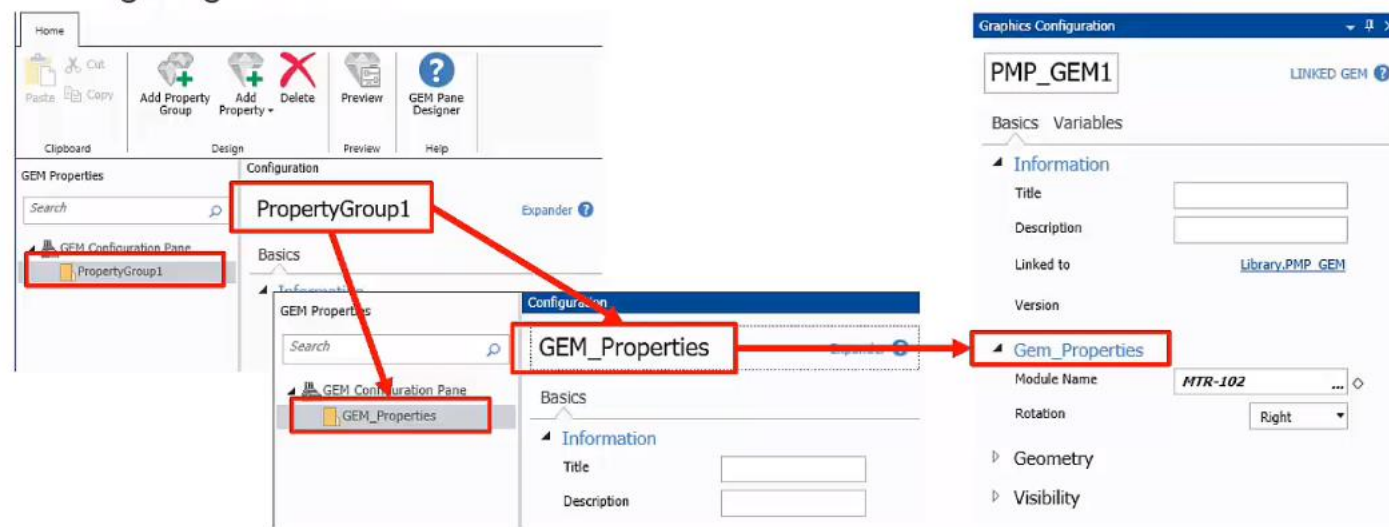
Graphical Elements – GEM Class Tools

- When creating a GEM, the GEM Class Tools appear in the Ribbon bar to aid in GEM development
- **Design:** Launches GEM Configuration Designer that is used to define parameters needed to be configured on the GEM
- **Resize to Fit Contents:** resizes canvas
- **Connection Point Tool:** creates connection anchor points
- **Notify:** All displays with the GEM set themselves as “Work in Progress” when the GEM class is modified



Graphical Elements – GEM Configuration Designer

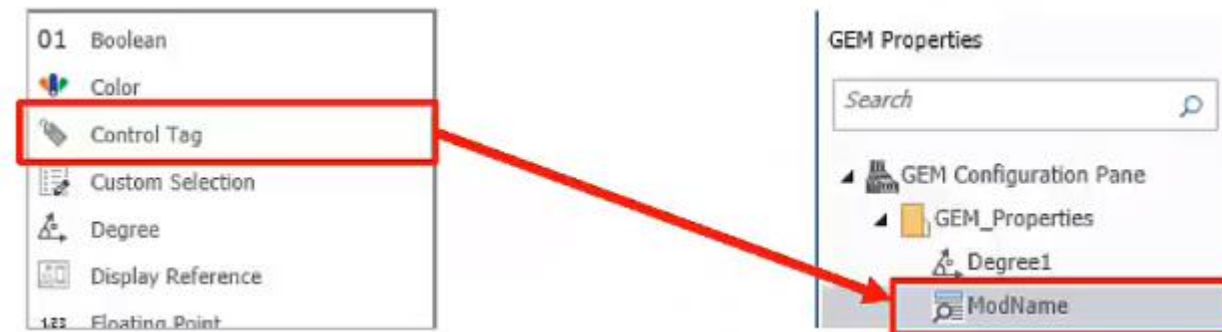
- GEM Configuration Designer provides the tools for creating configurable properties that appear for a GEM
- The most common parameter for a GEM is the parameter to enter a module name that will be linked to a GEM
- Property groups must be added before adding properties



Graphical Elements – GEM Configuration Designer

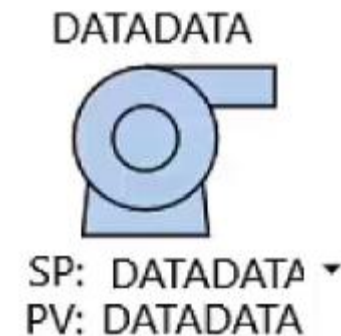
- Any property created for a GEM can be referenced by using “Gem.*PropertyName*” where *PropertyName* is the name the user assigned
- For example, in datalinks the data source looks like: DLSYS[“MTR-102/DC1/SP_D.CV”]
- For GEMs, the module name above will need to be replaced with a generic placeholder. If the GEM property for module name is ModName, the GEM parameter path will be:

DLSYS[Gem.ModName + “/DC1/SP_D.CV”]



Graphical Elements – Workshop

- Create a GEM from scratch for a pump
 - Place shapes and data links where required
- Use the GEM Configuration Designer to add a property for Module Name
 - Create a Property Group, then a Control Tag Property called ModName
- Place GEM on two displays, then edit the GEM class and observe how the change affects both graphics



Type: Named Set
 SP: Expression: DLSYS[Gem.ModName + “/DC1/SP_D”]
 Writes: Normal Write

Type: Named Set
 PV: Expression: DLSYS[Gem.ModName + “/DC1/PV_D”]
 Writes: Not Allowed

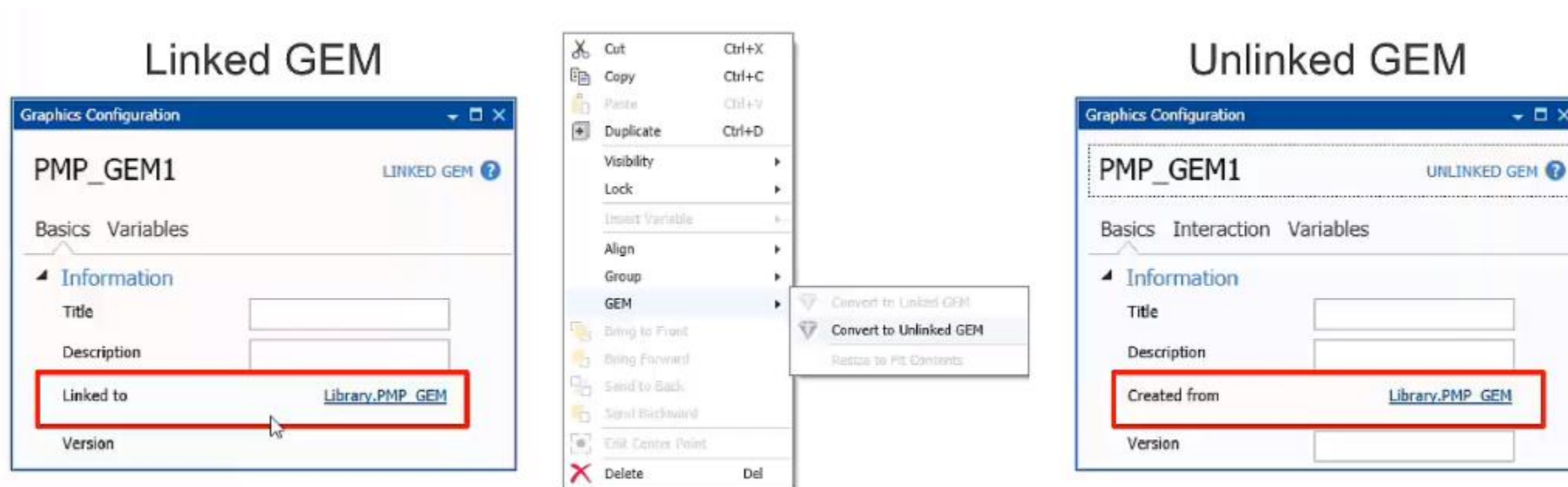
Graphical Elements – Creating GEMs from Objects

- GEMs can also be created by selecting objects on a display and selecting “Convert to Linked GEM”
- After creating the GEM, some modification will be needed to ensure the GEM works for multiple modules. This includes creating a GEM property for Control Tag and assigning it to a generic data link.



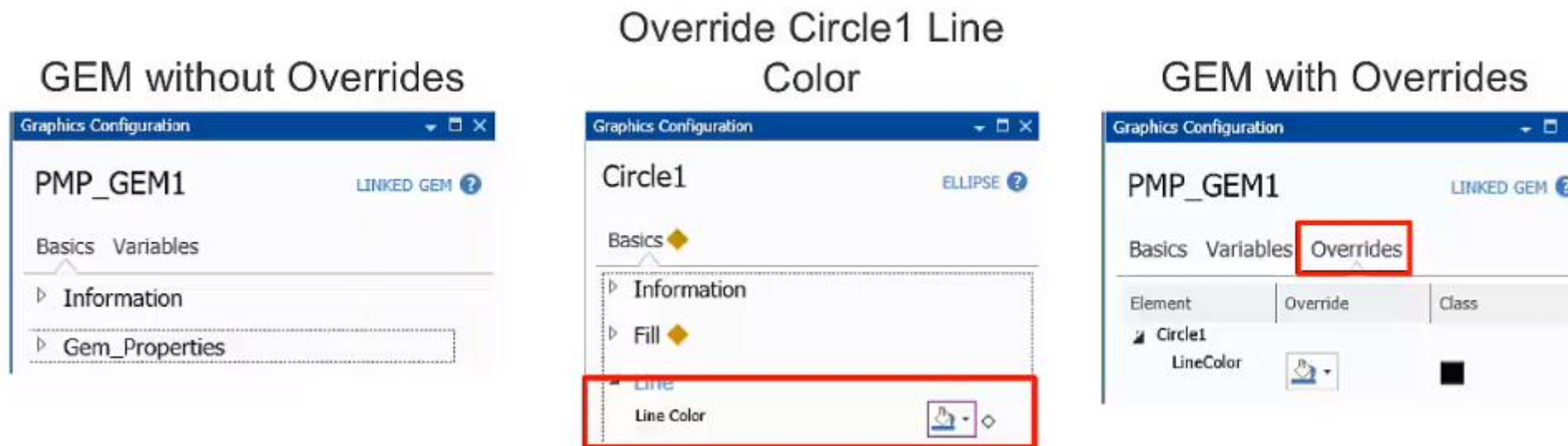
Graphical Elements – Link/Unlink GEMs

- GEMs on displays can be added as linked or unlinked GEMs.
- A linked GEM remains connected to the GEM class and any change to the class will affect that GEM
- An unlinked GEM is not affected by changes to the GEM class. This is similar to converting a module to classless in DeltaV



Graphical Elements – GEM Override

- Individual properties of a GEM class can be changed by overwriting the desired parameter.
- For example, to change the colour of a line from the default colour in the class, the line colour can be changed from the display's Graphics Configuration pane



Graphical Elements – Functions

- Functions can be used to create logic that convert values of one type into values of a different type
- Functions can use floats, strings, and Booleans as an input and output colours, fonts, Booleans, images, strings, measurements, or numbers

The screenshot shows a configuration interface for a function named 'F_New'. The interface is divided into several sections:

- Basics:** Contains the function name 'F_New' in a text field.
- Information:** Contains fields for 'Title' and 'Description'.
- Inputs:** Contains an 'Add Input' button and a table with columns for NAME, TITLE, TYPE, and DEFAULT VALUE. The table has one row with 'input1', an empty title, 'Float', and an empty default value.
- Calculations:** Contains an 'Add Calculation' button.
- Conversion Table:** Contains a 'Conversion Type' dropdown set to 'Rule-Based', an 'Add Rule' button, and a table with columns for RULE and OUTPUT. The table has one row with an empty rule and an empty output.

→ **Function Name:** Alpha-Numeric and special characters like \$ and _ are allowed. A max number of characters 48. Must contain at least one letter. No spaces allowed.

→ **Title and Description:** Optional information

Graphical Elements – Functions

- Functions can use between 1 and 5 inputs
- Calculations can be performed on the inputs as well. The user can create up to 5 calculations
 - When executing in DeltaV, calculations are performed from the top to the bottom as they appear in Graphics Studio
- The inputs and calculation results can be used in conversion tables through logic based on rules, values, or scripts
 - Rule Based: uses rules that define the input and output values
 - (Example: $\text{Average_Press} < 1 \rightarrow \text{Red}$, $\text{Average_Press} > 1 \rightarrow \text{Green}$)
 - Value Based: Compares single value to several choices and returns appropriate value
 - (Example: Average_Press between 0-1 \rightarrow Red, 1-2 \rightarrow Green)
 - Script Based: Allows the user to write custom expressions to define the inputs and output types



Graphical Elements – Workshop

- Add a colour function to the pump GEM:
 - Create a new function
 - Set the input type to Float and call it Input
 - Add two rules:
 - Rule 1: Input == 0
 - Rule 2: Input == 1
 - Assign appropriate colours (ex: Red and Green)
- On the GEM, click the animation diamond besides the Fill Color property, select Library Animation and select the newly created function
- Assign the tag reference for the animation

Graphical Elements – Custom Selection

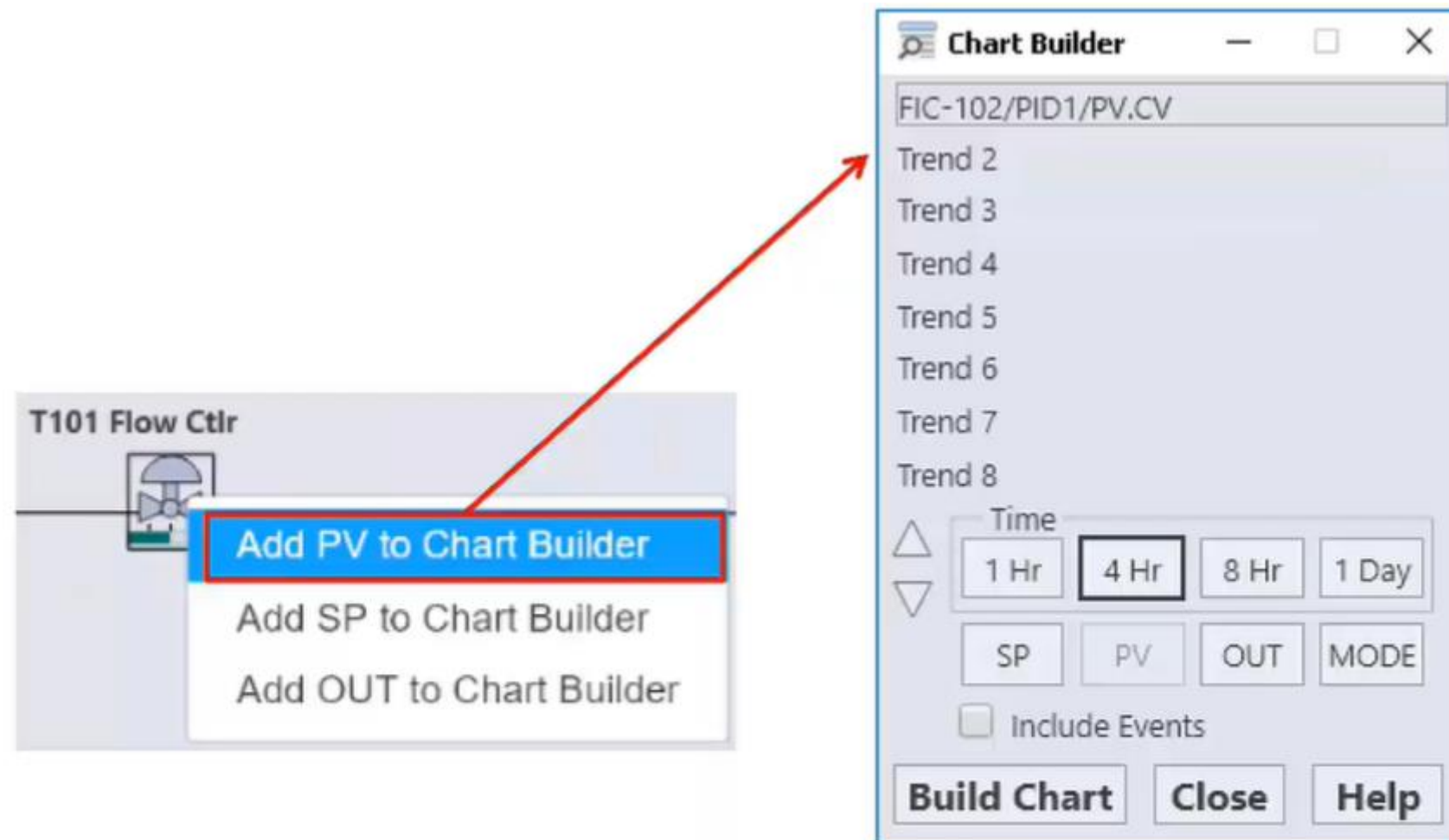
- The custom selection configuration property for GEMs creates a custom selection for the user to choose from. Up to 16 options can be created

The image displays two screenshots of the configuration interface for custom selections. The left screenshot shows the configuration for 'Selection1' with 1 option. The right screenshot shows the configuration for 'Rotation' with 4 options. A red arrow points from the 'Number of options' field in the first screenshot to the 'Number of options' field in the second. A red box highlights the table of options in the second screenshot.

NAME	Degree1
Up	0°
Down	180°
Left	270°
Right	90°

Graphical Elements – Chart Builder

- High performance GEMs have a feature to allow the user to create charts easily by right clicking on the GEM and adding the desired parameter to the Chart Builder:



Graphical Elements – References

- The user can see which displays are using an existing GEM by going to File → Info while the GEM is open

Graphics Studio 1-BH-01VADMIN

Info

LakesidePMP
Library1 > GEMClasses > LakesideGEMs >

Properties

Info

Description

Control Tags 2

Control Parameters 2

Element Count 9 ^

Last Modified

Modified By ADMIN

Date 1/17/2021 02:30:47 PM

Last Published

Published By

Date

Where Used Dependencies

References (Direct: 1 Indirect: 0 Unlinked: 0)

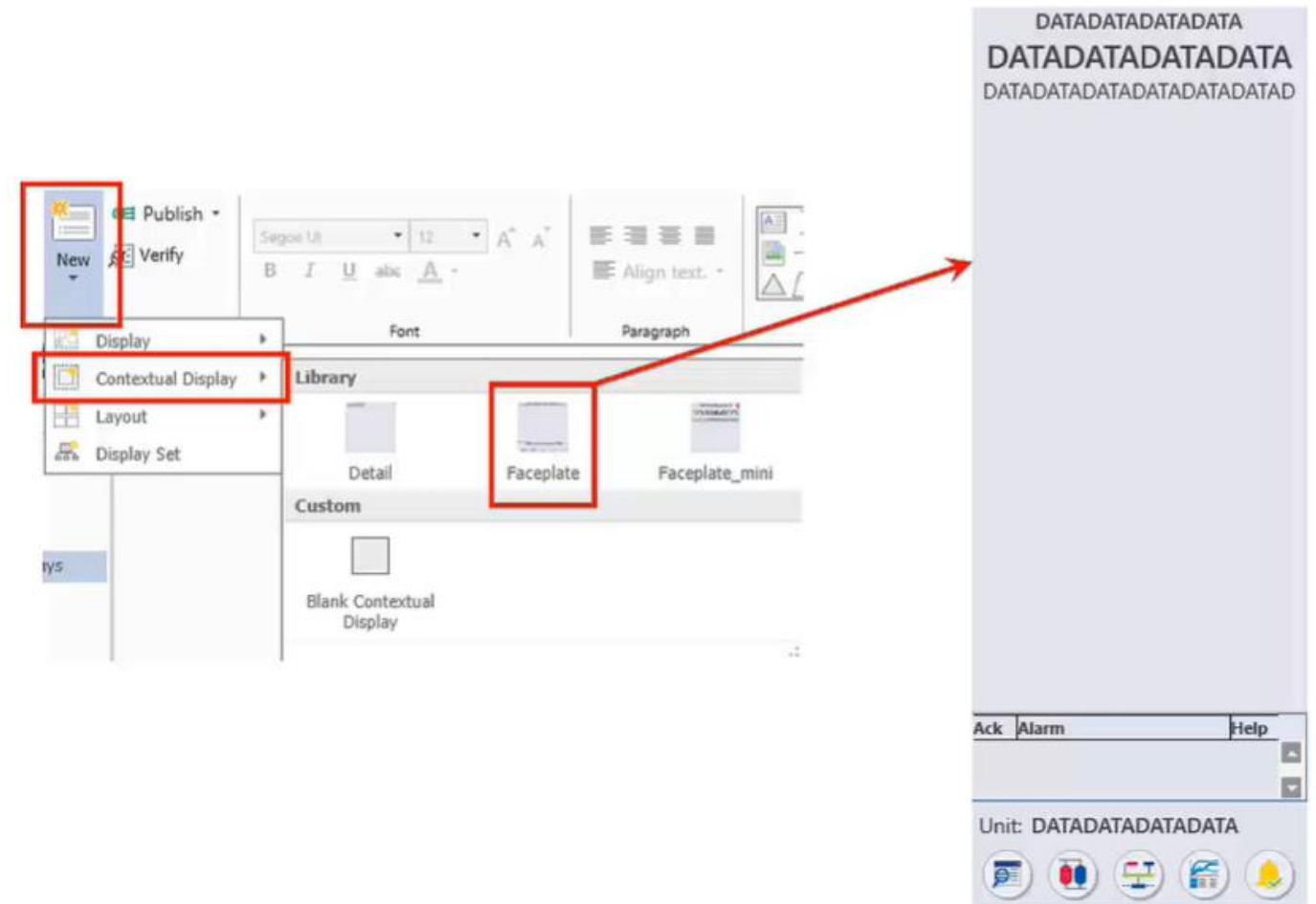
REFERENCE FOUND IN	PUBLISH PENDING	TYPE	FOLDER	REFERENCING PATH	REFERENCE TYPE	WORK IN PROGRESS	OVERRIDES	LAST SAVED
TestDisplay1	Yes	Display	Displays\LakesideDisplays	LakesidePMP2	Directly linked	No	Yes	1/17/2021 04:09:06 PM

Contextual Displays

Faceplates, details, popup pictures

Contextual Displays – Overview

- Contextual displays' content depends on the context they are open in
- A single graphic configuration can be created and shared by different DeltaV objects. This includes faceplates, detailed faceplates, and pop up pictures
- They can be launched from the display through the configured interaction (such as a click)
- When referencing a tag, you reference Dsp.Tag
 - For example: DLSYS[Dsp.Tag + “/PID1/SP.CV”]



Contextual Displays – Templates

- If creating a faceplate from scratch, it is best to start from a template
- Existing templates in the library contain scripts that are useful for the operator (i.e. acknowledging alarms, buttons on the bottom)
- Similarly, existing faceplates and detail faceplates can be customized to suit the operator's needs if only a small change is required

The screenshot shows a detailed control interface for FIC-102 (Tank 101 Out Flow). It includes sections for Limits, Alarms, Simulate, and Tuning. A red box highlights the Diagnostics section, which shows 'Module OK' under the 'ERROR' tab.

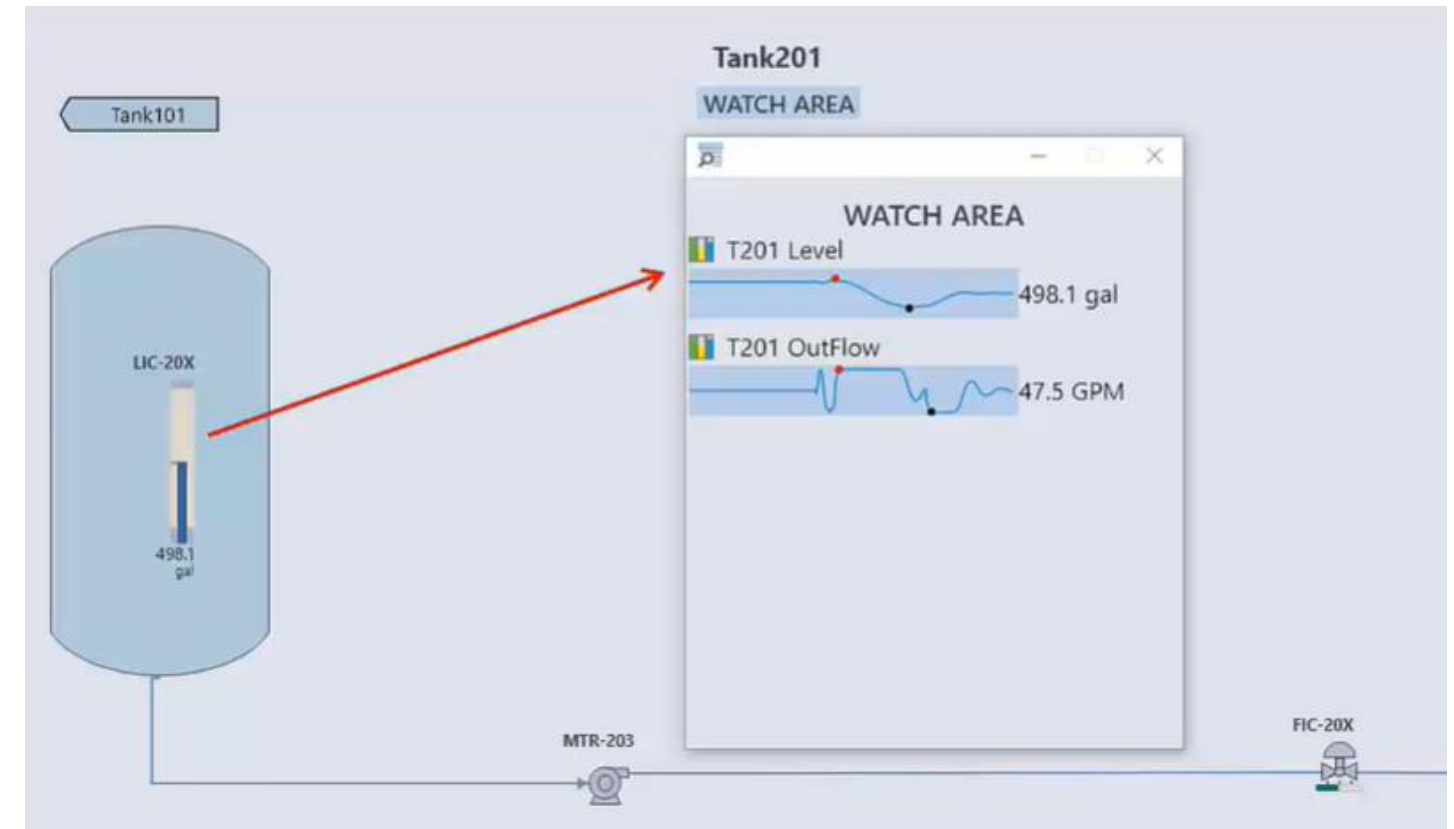
Section	Parameter	Value
Limits	Hi Hi Lim	100.0
	Hi Lim	90.0
	Dev Hi Lim	0.0
	Dev Lo Lim	0.0
	Lo Lim	10.0
	Lo Lo Lim	0.0
	Out Hi Lim	100.0
	Out Lo Lim	0.0
	ARW Hi Lim	100.0
	ARW Lo Lim	0.0
	SP Hi Lim	100.0
SP Lo Lim	0.0	
Alm Hysteresis	0.5 %	
Simulate	Simulate	<input checked="" type="checkbox"/>
	Field Value	50.0 %
Tuning	Gain	0.50
	Reset	10.00
	Rate	0.00
	PV Filter TC	0.0 s
	SP Filter TC	0.0 s
	SP Rate DN	0.0 EU/s
	SP Rate UP	0.0 EU/s
	I Deadband	0.0

The screenshot shows a simplified control interface for FIC-102 (PID Flow Loop). It includes a 'Limits' section and tabs for Tuning, Alarms, Diagnostics, and Simulate. A red box highlights the Limits section.

Parameter	Value
Hi Hi Lim	100.0
Hi Lim	90.0
Dev Hi Lim	0.0
Dev Lo Lim	0.0
Lo Lim	10.0
Lo Lo Lim	0.0
Out Hi Lim	100.0
Out Lo Lim	0.0
ARW Hi Lim	100.0
ARW Lo Lim	0.0
SP Hi Lim	100.0
SP Lo Lim	0.0
Alm Hysteresis	0.5 %

Contextual Displays – Watch Area

- Watch areas provide the user with an area where they can watch desired parameters for extended period
- GEMs can be dragged into the watch area to monitor them
- Watch areas can be made a part of the layout by creating a display frame with a watch area



Import/Export

Importing or Exporting Displays or Other Elements

Import/Export

- Unlike DeltaV Operate, the graphics are not stored in a folder that can be copied and pasted.
- All graphics are controlled through DeltaV Graphics Studio
 - To copy images into DeltaV, it can be done through import
 - To export images, it can be done through export

Graphics Studio

Import

Import from Folder File

C:\Users\Train01\Desktop

1 OF 1 ITEMS SELECTED FOR IMPORT

<input checked="" type="checkbox"/>	NAME	TYPE	COMPARISON	IMPORT ACTION	CREATE IN
<input checked="" type="checkbox"/>	OVERVIEW	Display	Newer	Replace	

Import Settings

Auto-select new items

Only active content languages

Graphics Studio

Export

Export to folder

C:\Users\Train01\Desktop

Export Progress/Results

Not Started

Export Settings

Include additional identifying information

Include dependent items

Include unmodified out-of-the-box items

Compress into zipped folder

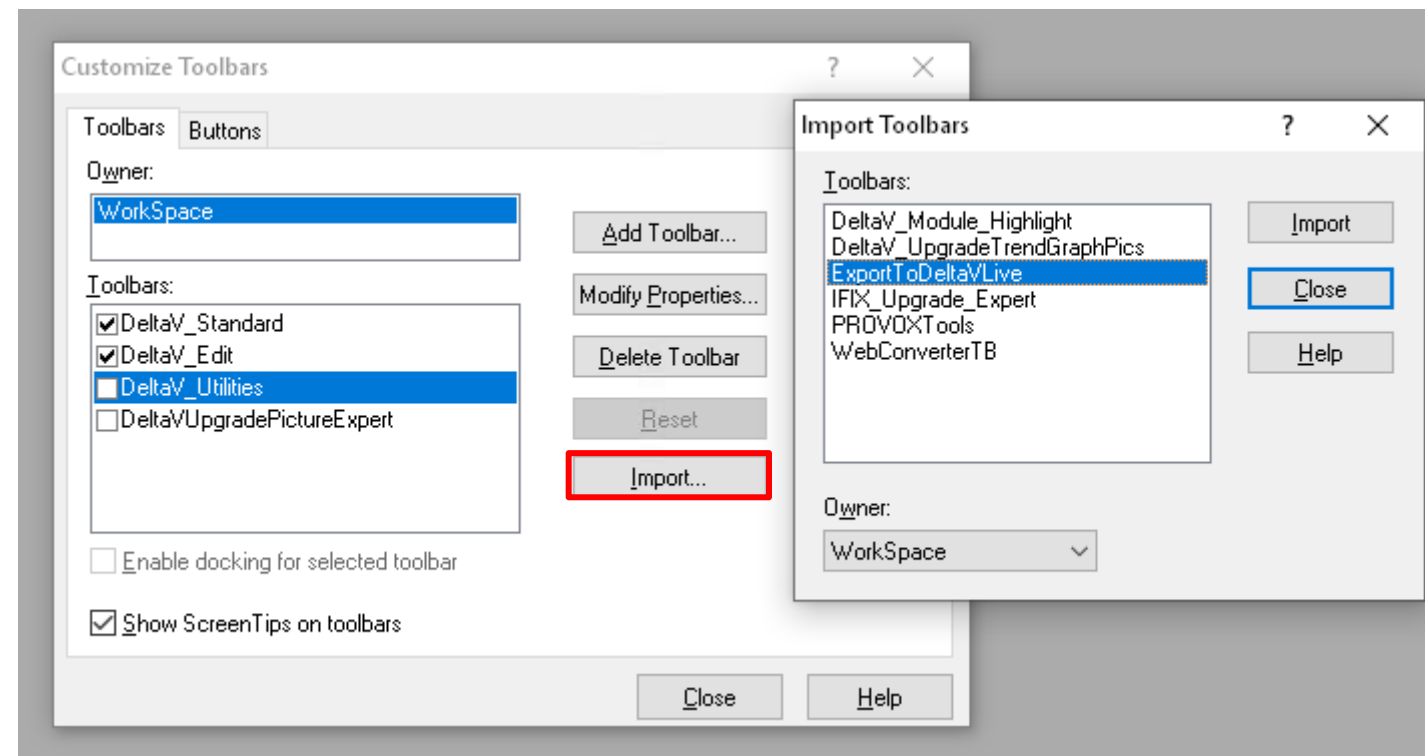
Conversion Tool

Converting DeltaV Operate Graphics to DeltaV Live



Conversion Tool – Steps

- To convert from DeltaV Operate to DeltaV Live:
 1. Import the Conversion Toolbar to DeltaV Operate Configure Mode
 2. Use the ExportToDeltaVLive Utility in DeltaV Operate
 3. Import the files to DeltaV Live
 4. Check log files to fix any issues from the conversion process



Conversion Tool – Configuration

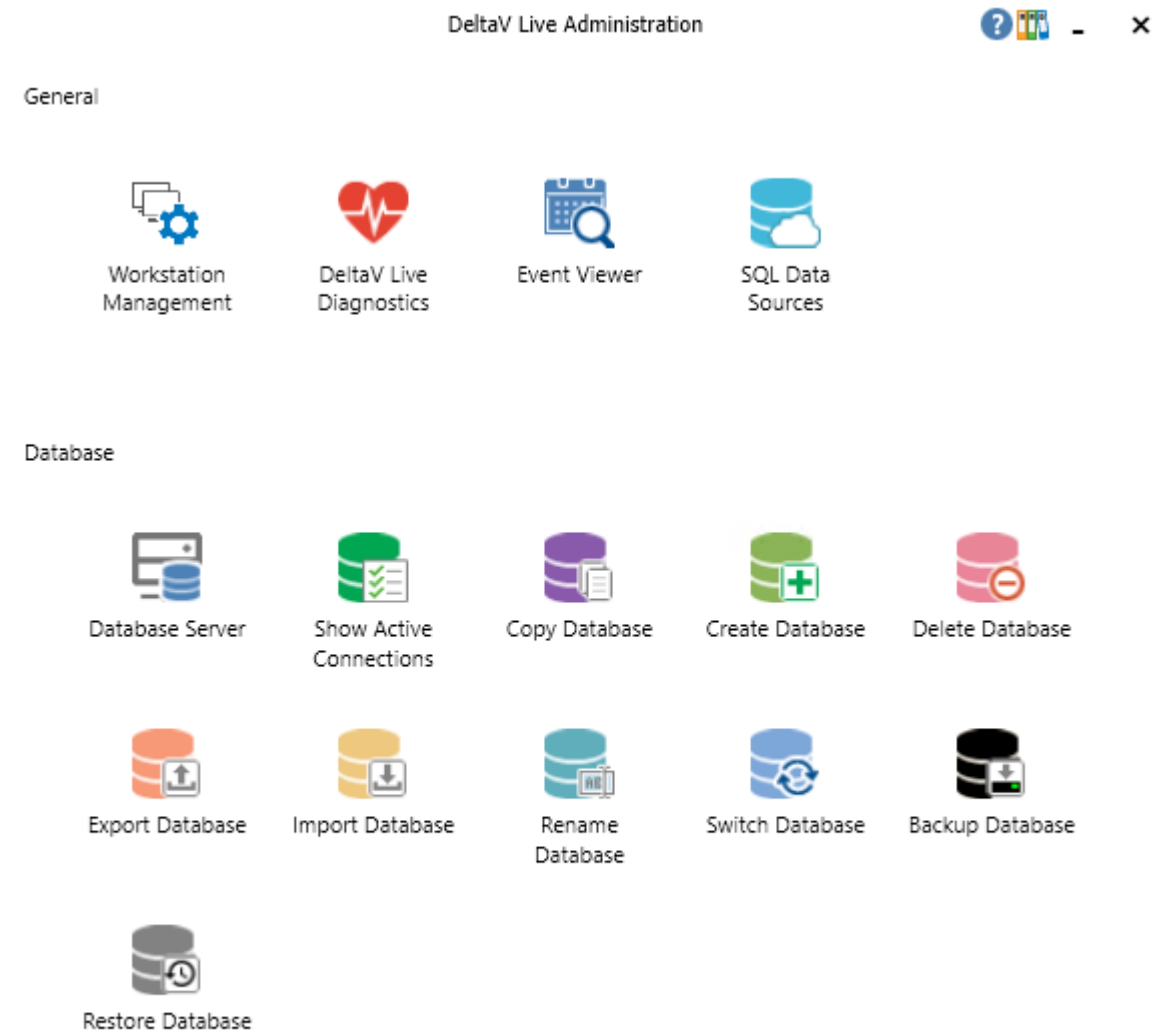
- Standard DeltaV Operate Dynamos will be converted to DeltaV GEMs
- Some of the pictures will require reformatting after the conversion
- From the error log, the user can confirm if any dynamos or datalinks are broken and need to be fixed
 - A list of the conversion issues can be found on DeltaV Books Online by searching for “Conversion Issues and Solutions”
 - The migration error code (e.g. #mig0027#) can be searched for in the migrated graphics in Graphics Studio

DeltaV Live Administration

Database Management

DeltaV Live Administration – General

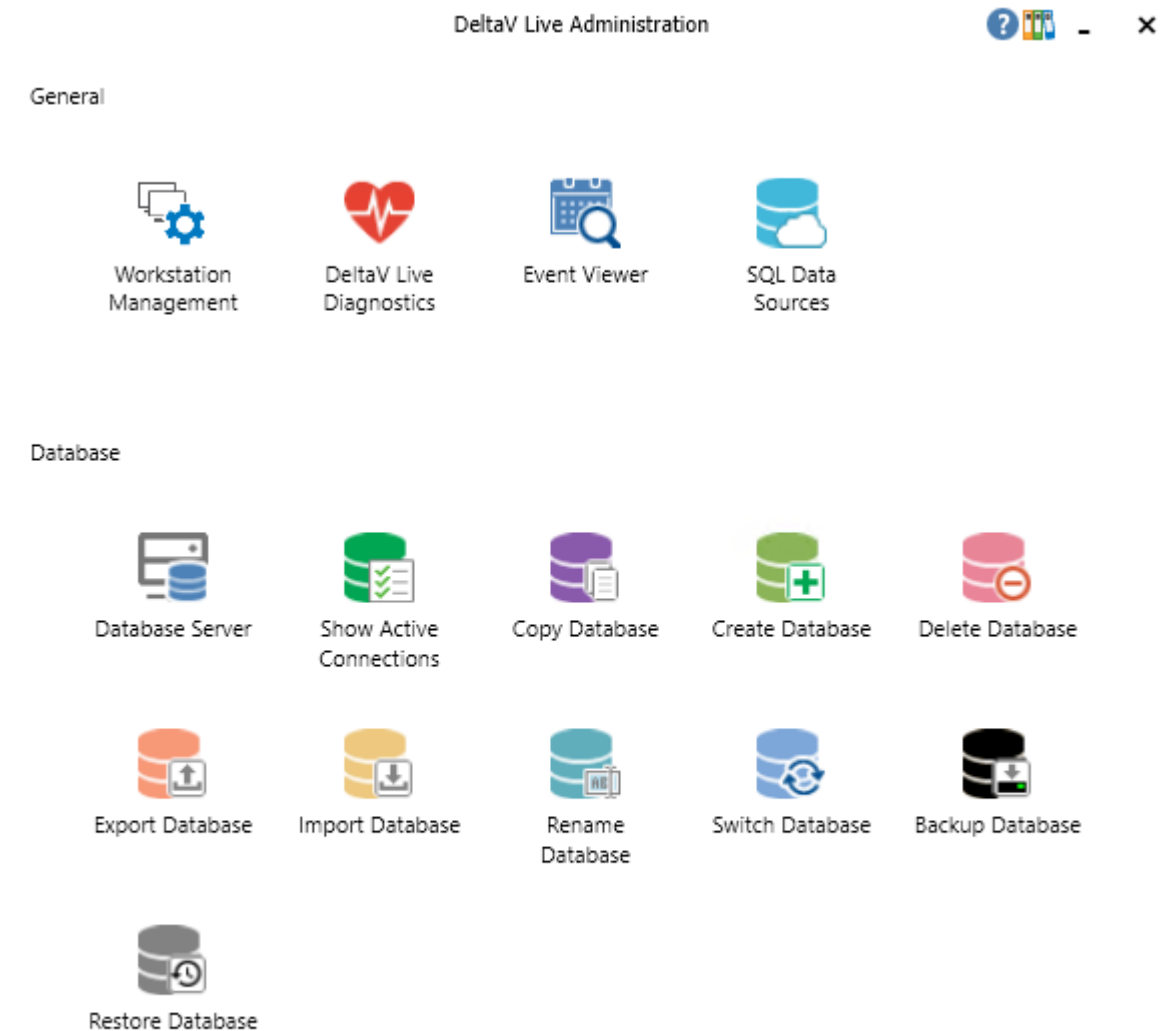
- Similar to DeltaV Database Administration tool
- Available tools:
 - Workstation Management
 - Used to enable/disable DeltaV Live and manage their settings
 - DeltaV Live Diagnostics
 - Used to view health of DeltaV Live enabled workstations
 - Event Viewer
 - Displays event log for DeltaV Live (e.g. replacing or removing displays)
 - SQL Data Sources
 - Can be used to connect to SQL databases
 - Database Management



DeltaV Live Administration – Database

- Database

- Database Server
 - Allows user to start or stop the database server
- Show Active Connections
 - Shows list of workstations connected to DeltaV Live
 - Allows user to disconnect workstations from the server
- Copy Database
- Create Database
- Delete Database
- Export Database
 - This creates individual files for each object in the database whereas backup database creates one files that includes everything
- Import Database
- Rename Database
- Switch Database
 - Mainly used for PK controllers
- Backup Database
- Restore Database

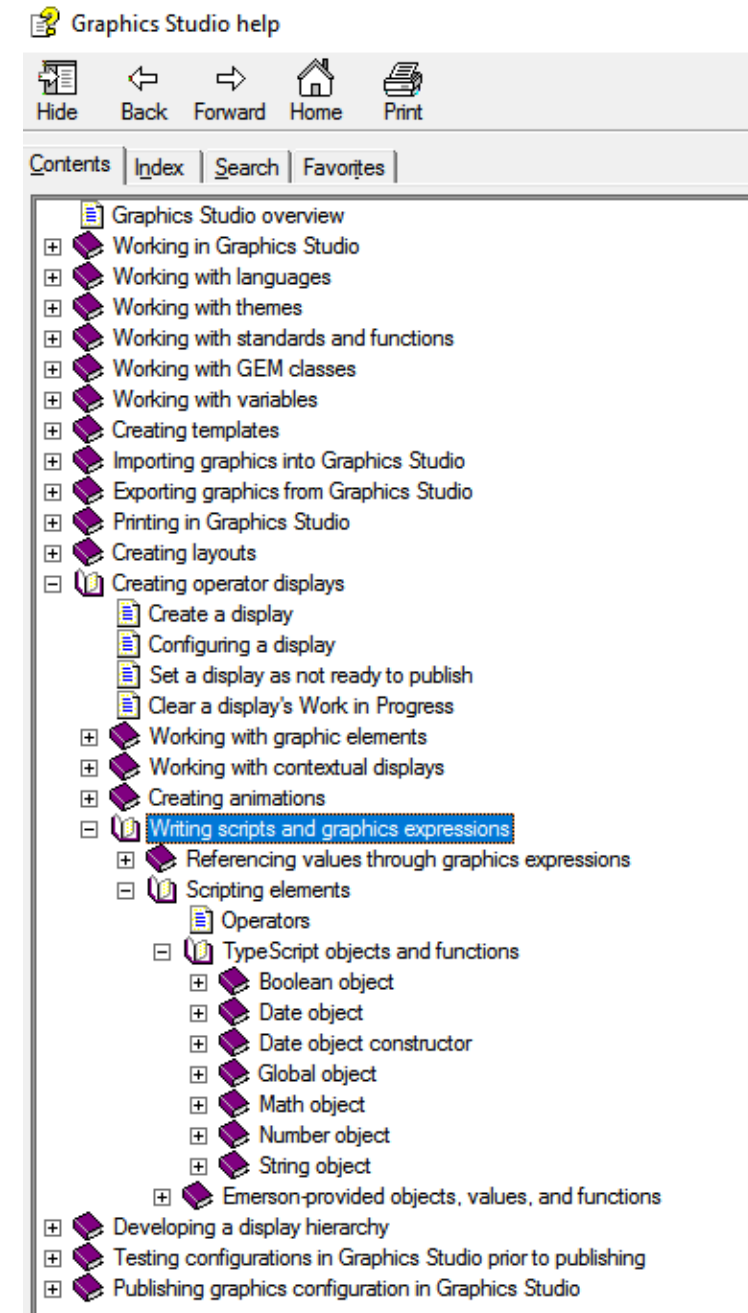


Scripting

Typescript

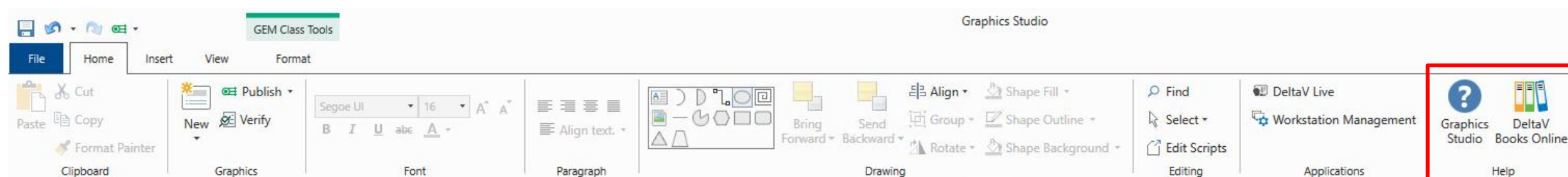
Scripting

- Scripting is available in DeltaV Live
- It uses the typescript programming language
- Some examples of uses for scripting include for, while, and if loops
- Graphics Studio Help is a good starting point for scripting help



Help

- For help with DeltaV Live, you can use Graphics Studio Help at the top of the Home ribbon bar.
- For general DeltaV help you can reference DeltaV Books Online



END

Thank you!

Questions?

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