

Report 2D Graph

The 2D graph reports allow the user to display any signal in the Workspace against any other signal in the Workspace.

Adding a 2D Report graph

To add a 2D report graph, select 2D Graph in the **Items to add** combo box and select the **Add**

Button

Add a new report item to the report

Page 1

Column 1

Span 1

Row 1

Span 1

Item to add:

2D Graph

Add

2D Report Graph Dialog

The following dialog will appear and should be populated.

Add / Modify Graph

Graph Title

Arial

14

B

I

U

Color

Black

Custom

Graph Properties

Location

Pos.

Span

Column:

1

Row:

1

Page:

1

Files to Graph

ALL_FILES

Query:

Edit Query

Line Color

Black

Custom

Line Style

Solid

☐ Bold

☐ Graph Mean

☐ Graph Standard Deviation

☐ Graph Confidence Ellipse

Annotations...

X Axis Properties

X Axis Label

Data Type

☐ Graph within a range of events

Y Axis Properties

Y Axis Label

Data Type

☐ Use scientific notation

☐ Show Points

Legend

Done

Clear Form

Cancel

This dialog has three sections to populate.

Section 1

Graph title, font selection and size. (Visual3D Version 5.0 feature)

Add / Modify Graph

Graph Title

Arial

14

B

I

U

Color

Black

Custom

Section 2

The basic graph properties

Graph Properties

Files to Graph: **ALL_FILES**

Query: **Edit Query**

Location:

Pos.	Span
1	1

Column: 1

Row: 1

Page: 2

Line Color: **Red** **Custom** Line Style: **Solid** ☐ **Bold**

☒ **Graph Mean** ☒ **Graph Standard Deviation** ☐ **Graph Confidence Ellipse**

Line Color: **Red** **Custom** Line Style: **Solid** ☐ **Bold**

Std Dev Style: **Solid** **Annotations...**

in this example, the graph will be plotted on Page 2, Column 1, Row 1

Files to Graph

The **Files to Graph** combo allows the user to select ALL_FILES or any TAG

Line Color and Line Style

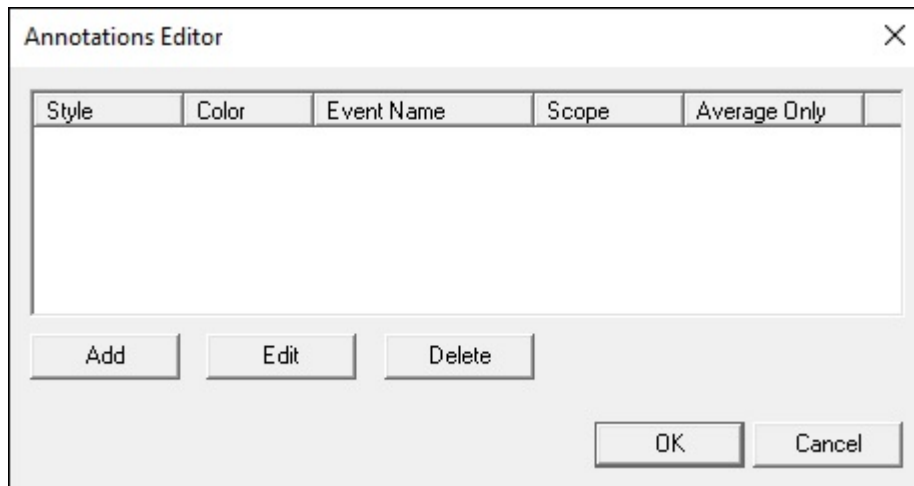
The top Line Color and Line Style refer to the signal lines drawn

Mean and Standard Deviation

In this example, the check boxes **Graph Mean** and **Graph Standard Deviation** are checked, which means that the mean and standard deviation of the signal lines selected will be computed and displayed.

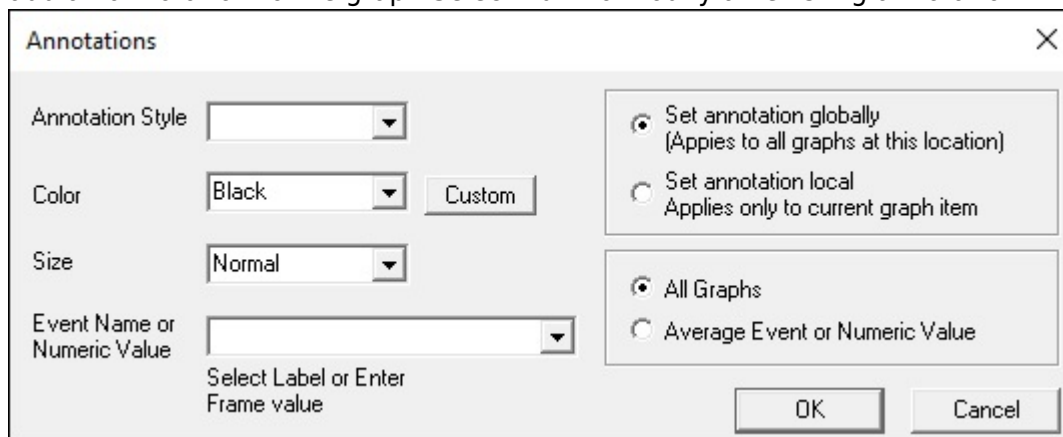
Annotations

See also the associated Pipeline Command [Add_Graph_Annotation](#)



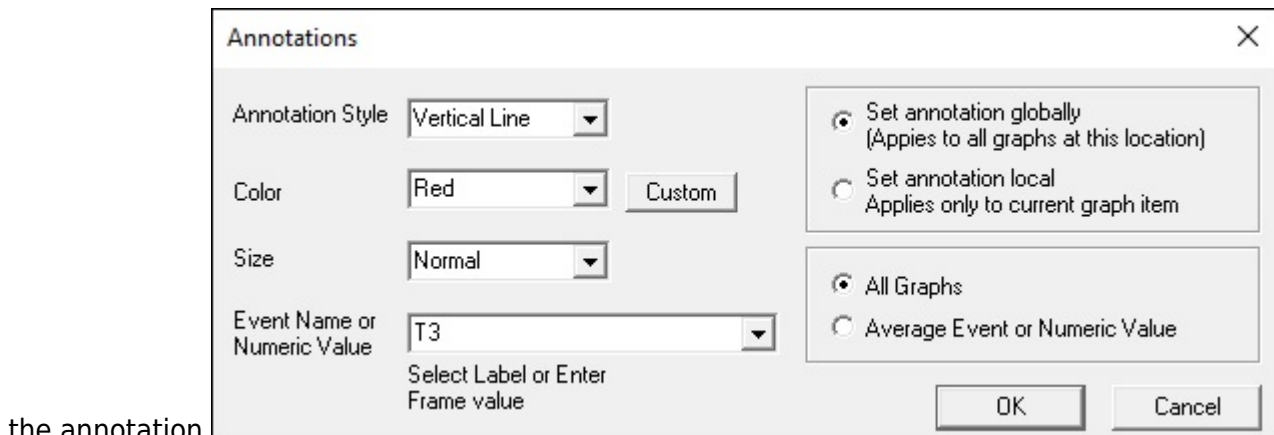
The Annotations Editor dialog box features a table with five columns: Style, Color, Event Name, Scope, and Average Only. Below the table are three buttons: Add, Edit, and Delete. At the bottom right are OK and Cancel buttons.

The initial dialog. Select **Add** to add an annotation to the graph Select **Edit** to modify an existing annotation.



The Annotations dialog box contains settings for an annotation. On the left, there are dropdowns for Annotation Style, Color (set to Black), Size (set to Normal), and Event Name or Numeric Value. A 'Custom' button is next to the Color dropdown. On the right, there are two groups of radio buttons. The first group has 'Set annotation globally (Applies to all graphs at this location)' selected and 'Set annotation local (Applies only to current graph item)'. The second group has 'All Graphs' selected and 'Average Event or Numeric Value'. OK and Cancel buttons are at the bottom right.

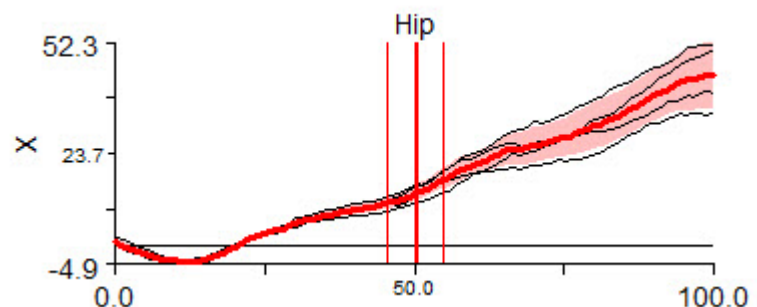
The initial dialog for



This version of the Annotations dialog box shows specific settings: Annotation Style is 'Vertical Line', Color is 'Red', Size is 'Normal', and Event Name or Numeric Value is 'T3'. The 'Set annotation globally' and 'All Graphs' options remain selected. The 'Custom' button is still present next to the Color dropdown. OK and Cancel buttons are at the bottom right.

the annotation

Select the parameters of the annotation. If All Graphs are selected an annotation is added for every



occurrence of the Event for every graph.

Notice the multiple vertical lines because there is an event for each graph.

Annotations [X]

Annotation Style:

Color:

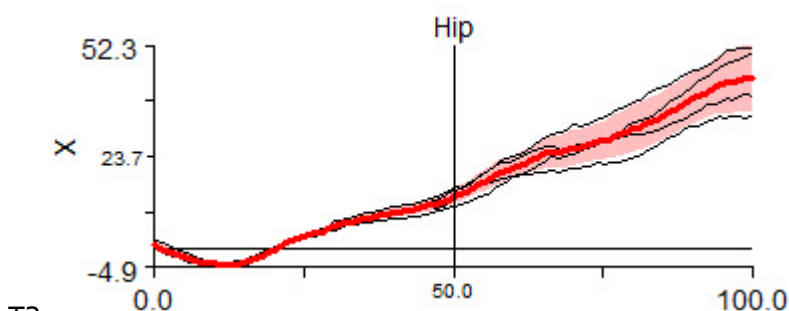
Size:

Event Name or Numeric Value:
Select Label or Enter Frame value

☒ Set annotation globally (Applies to all graphs at this location)
☐ Set annotation local (Applies only to current graph item)

☐ All Graphs
☒ Average Event or Numeric Value

If Average Event or Numerical Value is selected, Visual3D interprets the edit box. For example, specifying the Event label



T3
 location of the Event is identified and drawn.

For example, in this case the average

Annotations [X]

Annotation Style:

Color:

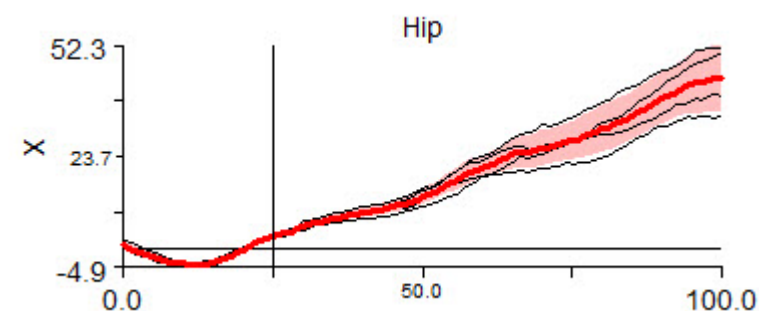
Size:

Event Name or Numeric Value:
Select Label or Enter Frame value

☒ Set annotation globally (Applies to all graphs at this location)
☐ Set annotation local (Applies only to current graph item)

☐ All Graphs
☒ Average Event or Numeric Value

If Average Event or Numerical Value is selected, Visual3D interprets the edit box. For example, specifying the Time 3



drawn at 25% of the x-axis..

For example, in this case the annotation is

Section 3

The signal used for the x-axis.

X Axis Properties

X Axis LabelTime

X Axis ScaleNormalize 0% to 100%

Data TypeFRAME_NUMBERS

Data NameTIME

☒ Graph within a range of events

Range BeginRHS

Range EndRTO

LHSLOFFLONLTO RHSROFF

Intermediate Events

Exclude sequences containing

In this example, time is displayed on the x-axis.

The signals in the Y-Axis properties for (File to graph and within a graph) that have occurrences of the range Range Begin to **Range End** will be drawn on the graph.

If **Intermediate Events** are selected, only ranges from **Range Begin** to **Range End** that contain the **intermediate events** will be graphed.

If Exclude sequences containing is populated, only ranges from **Range Begin** to **Range End** that do not contain the **excluded events** will be graphed

Section 4

The signal used for the y-axis

Y Axis Properties

Y Axis LabelDegrees

Y Axis ScaleBy Explicit Setting

Create/View/Modify Link_Model_Based

Data TypeLINK_MODEL_BASED

☐ Use scientific notation

Data NameRANKLE_ANGLE

☐ Show Points

ComponentX

FolderORIGINAL

In this example, the x-component of the Right Ankle Angle will be displayed.

The range of the graph can be specified as:

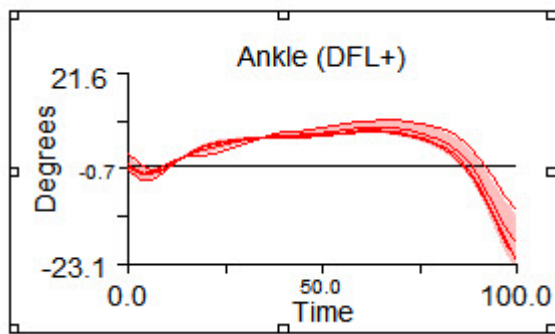
1. Normalize 0% to 100% - each range of data will be scaled from 0 to 100 percent

2. Global Min to Max - the minimum and maximum value of the signals across all ranges is computed

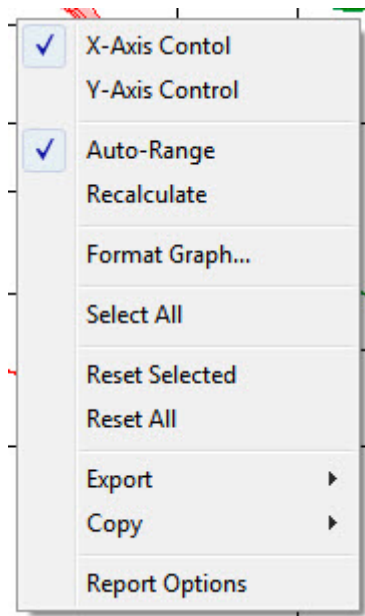
3. By Explicit Setting - The user can format the graph and specify an explicit range regardless of the signals selected.

Defining an Explicit Range

Select a graph in the report. If the graph is selected you will see “handles”



Move the cursor over the selected graph, and push the right mouse button. A menu will appear.



Select Format Graph and a dialog will appear

Graph Format

Fixed Scale

☒ Modify X Axis Scale ☒ Modify Y Axis Scale

0.000 X Min -30 Y Min

100.000 X Max 30 Y Max

☒ Apply to Primary Selection Only

☐ Draw X and Y axis proportional to unit lengths

☐ Show Legend

☐ Show Grid ☐ X Gridlines ☐ Y Gridlines

☐ Set XTic to Increment 5 X Tics 5 Y Tics ☐ Set YTic to Increment

☐ Set Increment ☐ X Increment ☐ Y Increment

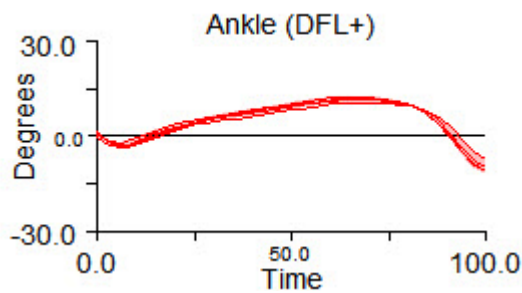
☒ Show BaseLine

☐ Show Points

☐ Save these settings as the default

☒ Apply to All Selected

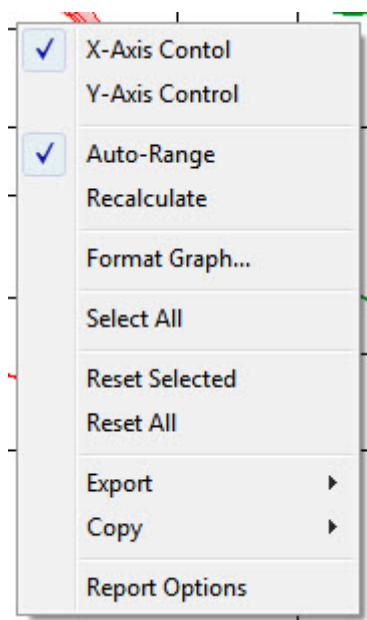
Select the Y Min and Y Max values and save these settings as the default. This means that these setting will be preserved in the Report Template.



Section 5

Set the properties of the legend

Move the cursor over the selected graph, and push the right mouse button. A menu will appear.



Select Format Graph and a dialog will appear

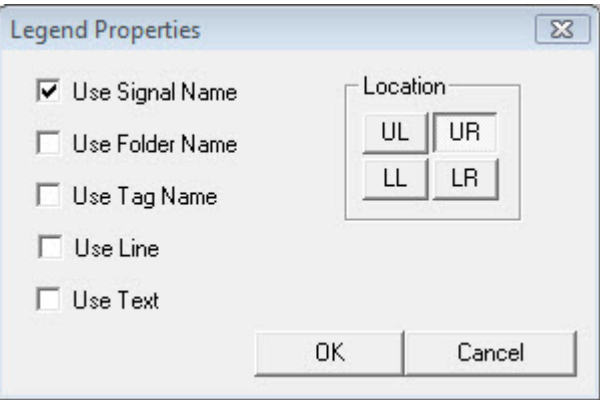
The Graph Format dialog box contains the following settings:

- Fixed Scale:**
 - ☒ Modify X Axis Scale
 - ☒ Modify Y Axis Scale
 - X Min: 0.000, X Max: 100.000
 - Y Min: -30, Y Max: 30
 - ☒ Apply to Primary Selection Only
 - ☐ Draw X and Y axis proportional to unit lengths
- ☐ Show Grid
 - ☐ X Gridlines
 - ☐ Y Gridlines
- ☐ Set XTic to Increment 5, X Tics 5, Y Tics 5
 - ☐ Set YTic to Increment
- ☐ Set Increment
 - ☐ X Increment
 - ☐ Y Increment
- ☒ Show BaseLine
- ☐ Show Points
- ☐ Save these settings as the default
- ☐ Show Legend,
- ☒ Apply to All Selected

Buttons: Apply, Close

Select the option to display the legend.

Select the button to modify the legend

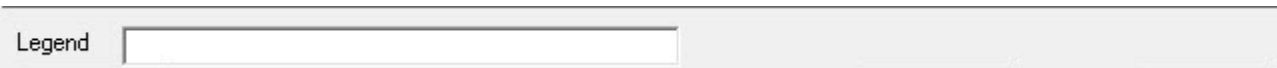


The legend can be placed at the Top Left, Top Right, Bottom Left, or Bottom Right.

1 or more of the selections of the legend text can be selected.

Adding Custom Legend Text

Adding the text for the Report Legend.



If you have populated this dialog, you will not see the legend in the graph by default.

If you have entered text in the graph format dialog, you need to select the option to display text in the “Legend Properties” dialog.

Adding more signals to the Report Graph

The report dialog acts on one report graph entity.

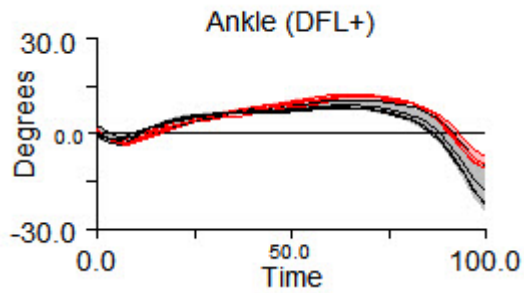
The graph that appears in the report, however, may contain many entities.

A second signal can be added to the graph in the report by adding another graph entity to the same location. Each graph entity may contain its own graph properties.



For example, this image shows two graphs RANKLE_ANGLE and LANKLE_ANGLE located on Page 2, Column 1, Row 1.

The resulting graph contains data from the 2 signals. RANGLE_ANGLE in Red and LANKLE_ANGLE in Black, each with its own mean and standard deviation.



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