II-4 Changing the Graph Display

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We shall explain about how to change the appearance of graphs by changing parameters with GUI or in XML documents, in order to make graphs understandable.

> **help**
> For a detailed explanation of each parameter, you can refer to the [Help] menu of the GUI.

1. Graph Display Settings Parameters

Parameters related to graph appearance are below page in the model XML hierarchy. We shall explain about the parameters individually, using the Vm graph in the top left of the GUI screen as an example.

Parameters which are shown with red numbers are related to graph display area. When this parameter changes, the size of the corresponding graph changes, as displayed in figure 2-4-2. Also, parameters which are displayed with black numbers decide the minimum and maximum values of graph axes, and waves are displayed within this scope.

1.1. About Each Parameter

page
graph display area
 # min
x axis minimum value
 # max
x axis maximum value
 # interval
display interval time (time until the next display)(ms)
 # reference width
graph display area width

The referenceWidth value is 29,700 (0.01 mm units. In other words, 29.7 cm). The referenceHeight value of 21,000(=21 cm) is A4 size. Here is a graph image drawn on A4 size paper facing sideways.

 # reference Height
height of the graph display area
 # titleSize
font size of the name displayed above the graph
 # legendSize
font size of the legend displayed below the graph
 # axisSize
font size of the x axis, y axis titles
 # labelSize
font size of the number values displayed on the axis
page/Vm

graph name
 # target 1, target 2 ..
parameter names displayed on the graph

From target 1 until target n can be displayed, up to eight items have colours attached in this order (black,red,blue,green,pale blue,pink,yellow,beige). When 9 or more items are displayed, these colours are used again starting from black.

page/Vm/Vm
y axis title of the Vm graph
 # Vm / Vm / origin
starting point of a y axis on paper turned into an image

At the top is a starting point of 0. The unit of referenceWidth is 0.01mm.

#Vm / Vm / length
length of the y axis on paper turned into an image (0.01 mm)
#Vm / Vm / min
y axis minimum value
#Vm / Vm / max
y axis maximum value
page/Vm/Time
Vm graph x axis title
#Vm / Time / origin
starting position of the x axis on paper turned into an image
#Vm / Time / length
length of the x axis on paper turned into an image (0.01 mm)
#Vm / Time /does plot label
flag indicator settings of the axis label

If it's `true` then fill it in, and if it's `false` then don't

grid step
ruled line interval in a vertical or horizontal direction
label step
filled in interval of the axis label
pattern
label display format settings (example: if it's 0.0 it can have up to 1 decimal place)

Individual graph settings and shared settings

Sets the minimum/maximum values of the x axis as the child elements of a page because settings are shared by each graph differently from individual settings, like for the minimum/maximum values of the y axis.

2. Correspondence of Graph and XML File Parameters

The figure below is taken from a section of the program matsuoka_et_al_2003/model.xml. When the

numbers are changed in an XML document, the graph appearance changes.