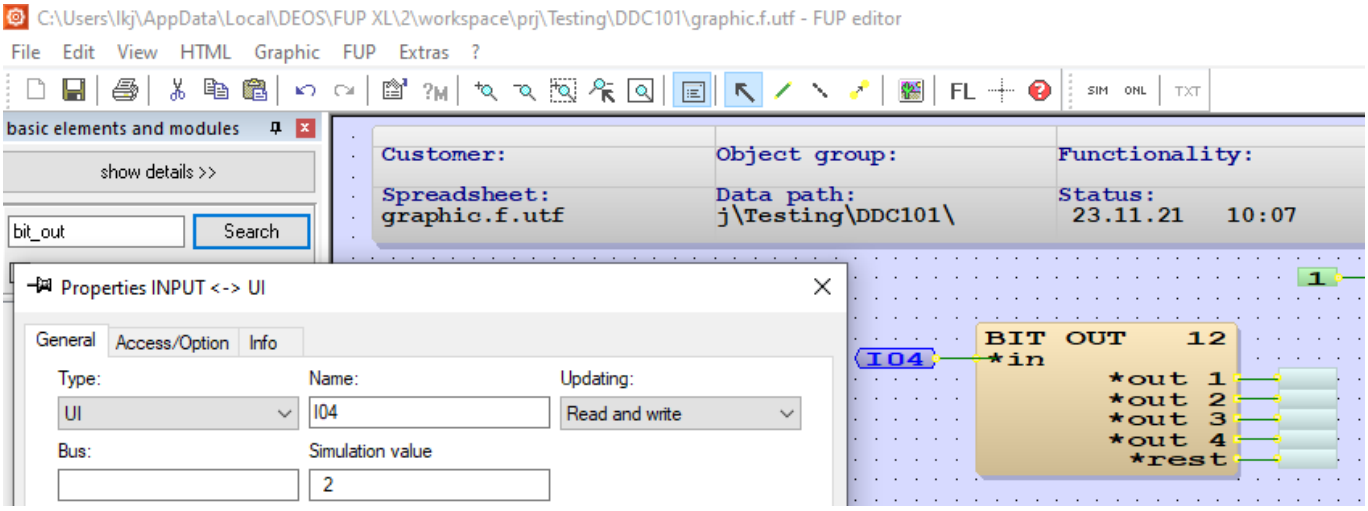
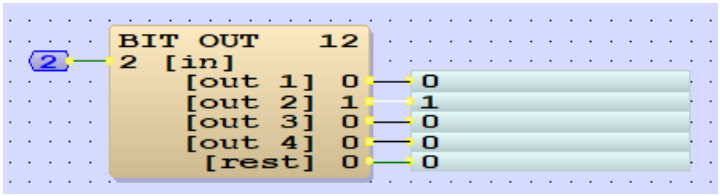
TT220102 – FUP - Graphic Elements for Multistate Point

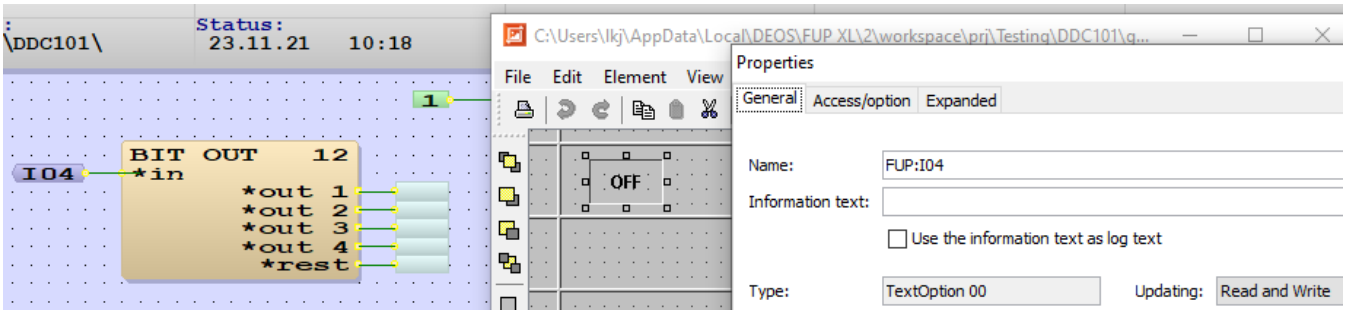
1. In “TT190701”, we show you the graphic elements for digital point. For multistate point, we can use point type “UI” in FUP. For example, to represent system mode “Off/On/Auto” when the UI value is 0, 1 and 2 respectively.



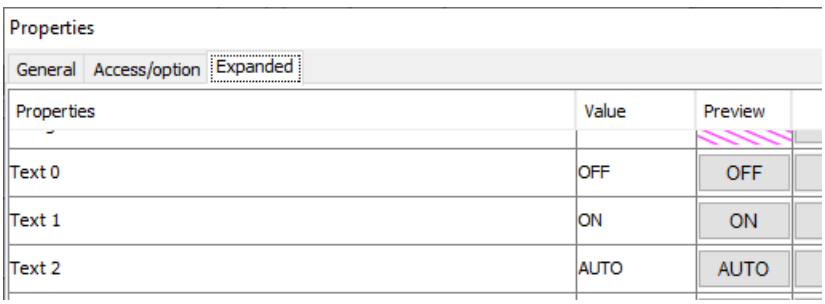
2. Then, we can use the “BIT_OUT” module to turn on the corresponding “mode”. In the example below, the “out_2” output will be “1” when the UI point value is “2”. You can then use the outputs to decide what to do in your control logics.



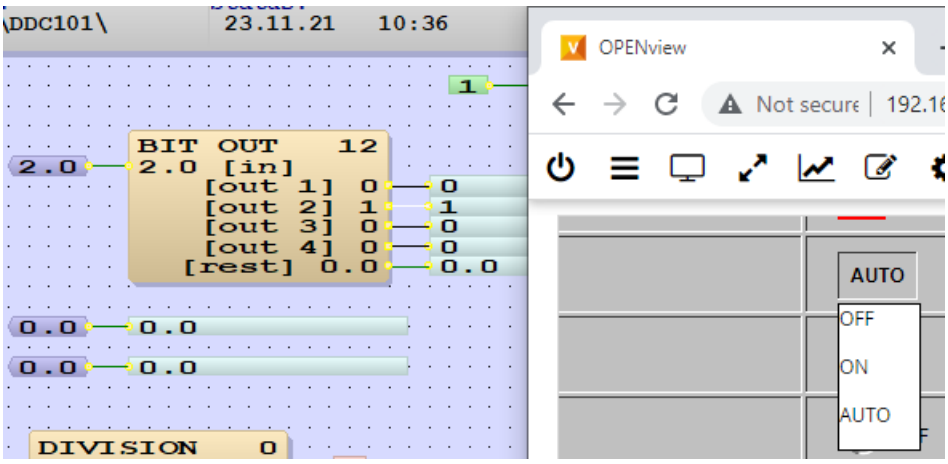
3. You can connect more “BIT_OUT” module via the “rest” output, if you need more than 5 states.
4. We can use different graphic elements to show/change the multistate point in graphic editor. First, try the “TextOption00”. Link it to the UI point (e.g. I04) and set the “Updating” to “Read and Write” if you need to change it in graphic page.



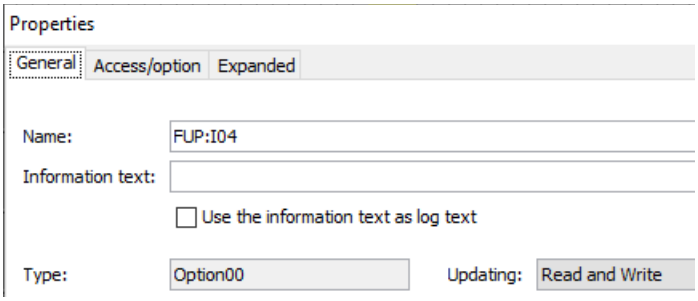
5. Go to “Expanded” tab, and set the texts for value 0, 1 and 2. In the example below, we use “OFF”, “ON” and “AUTO” for the mode.



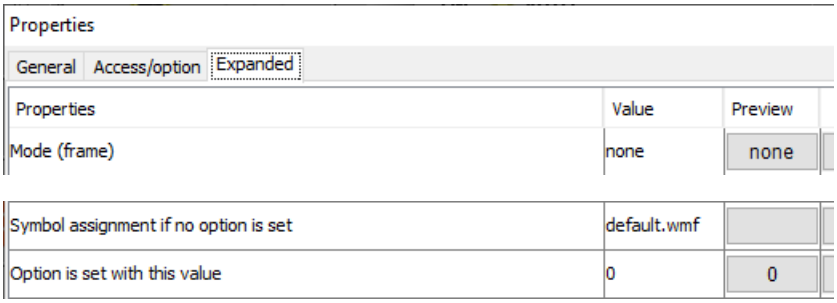
6. This creates a text box to show the mode text, and a drop-down menu for user to change the mode. You can test it in OPENview after compile and upload to the controller.



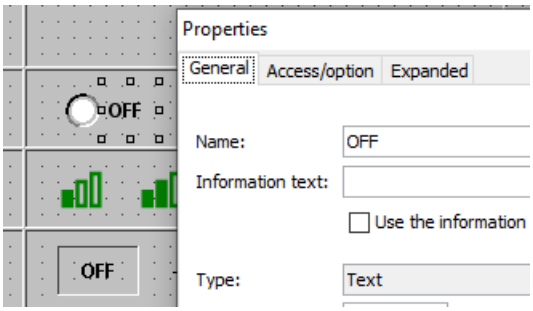
7. Next, we will use “Option00” element in graphic editor. Add it to the graphic and link it to UI point.



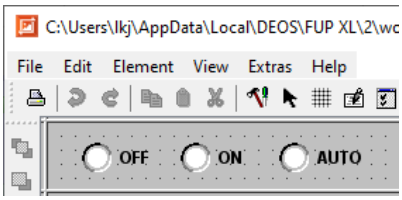
8. Go to “Expanded” tab, and set “Option is set with this value” to “0”.



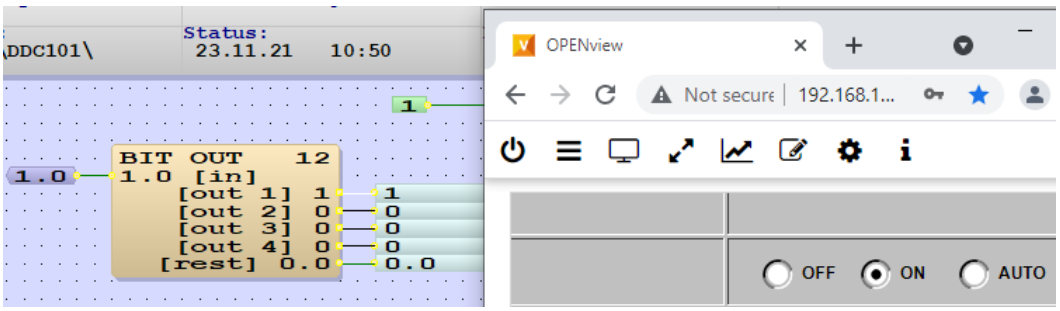
9. Add a “Text” element next to it and set the “Name” to “OFF”.



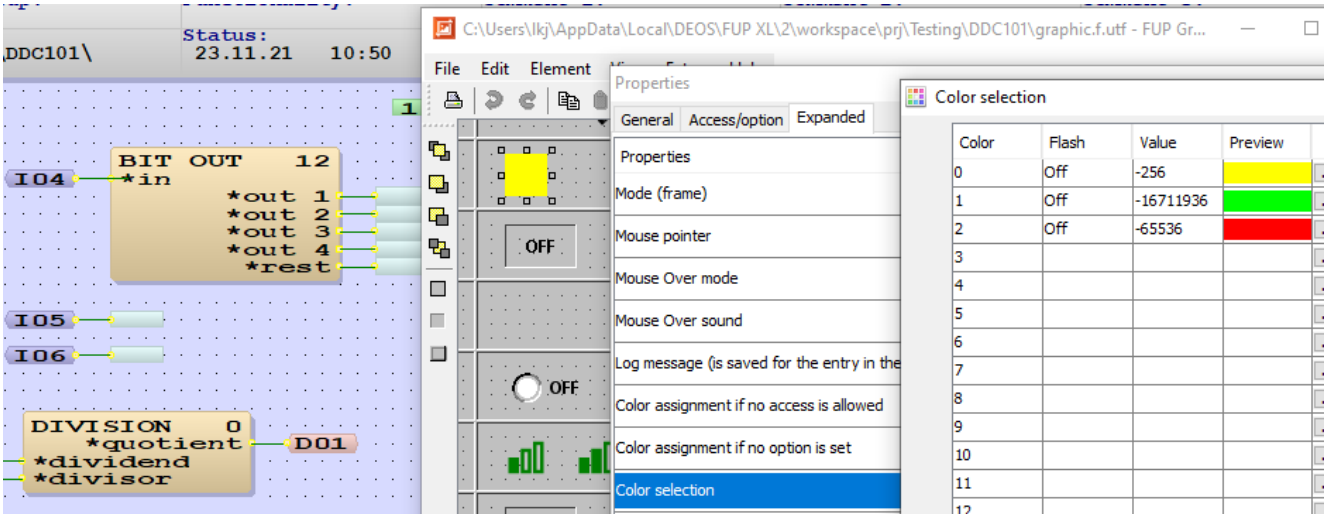
10. Now copy and paste it 2 times. For the “Option00” element, set the “Option is set with this value” to 1 and 2, and change the “Name” of the “Text” element to “ON” and “AUTO”.



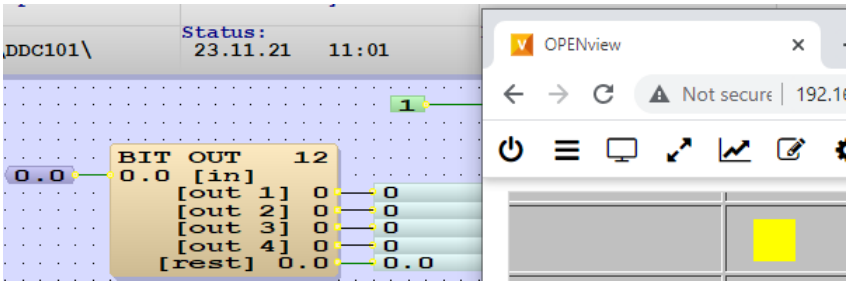
11. You can change the mode in OPENview using the “Option” button. For example, click the “ON” option to change it to 1, and the “out_1” output of the “BIT_OUT” module will set to “1”.



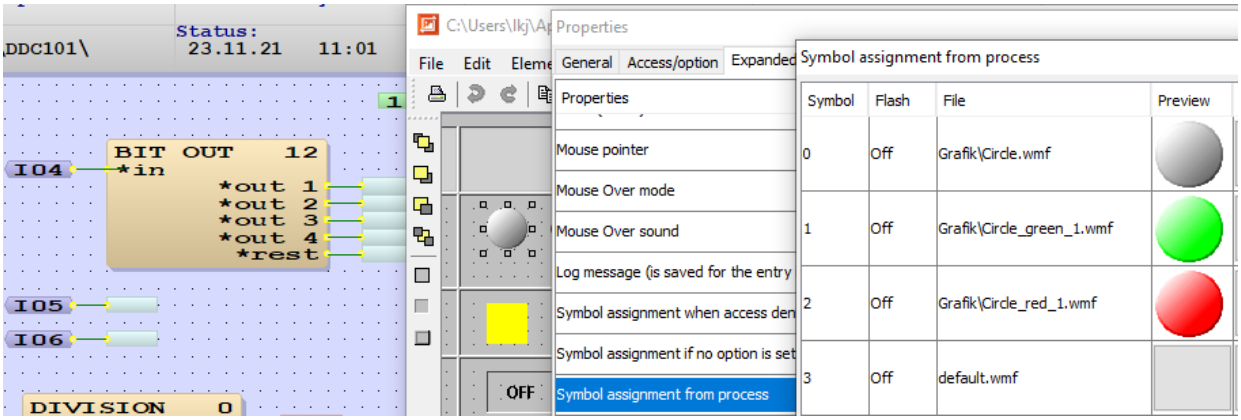
12. Next, we use the “Color” element. Link it to the “Input”, go to “Expanded” tab, click “Color Selection” button and set the colors for the state “0”, “1” and “2”. Remember to set the “Updating” to “Read and Write” if you want to change it.



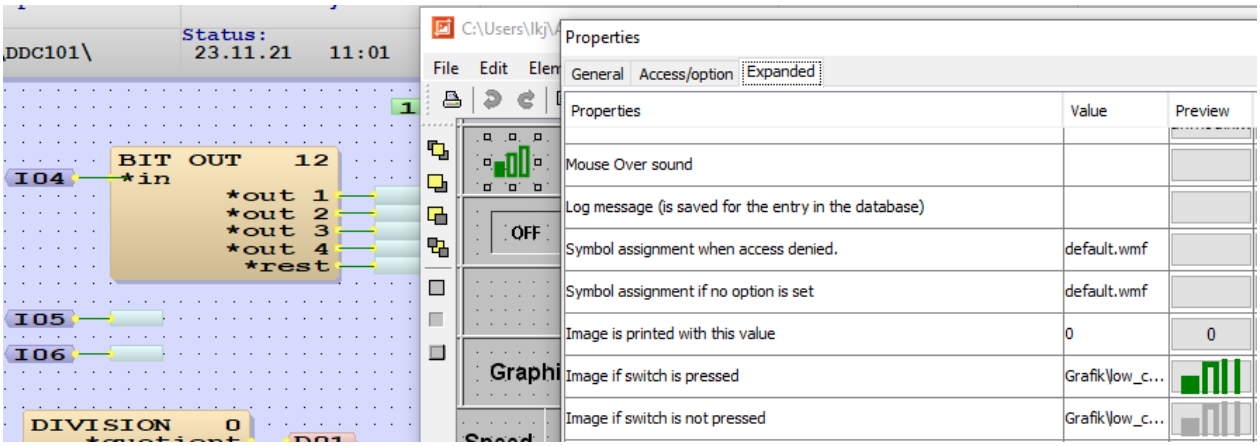
13. In OPENview, now you can click on the “Color” to change the value. The value will change from 0, 1 and then 2, and go to 0 again when you click on it, and the corresponding color shows the current value of the UI point.



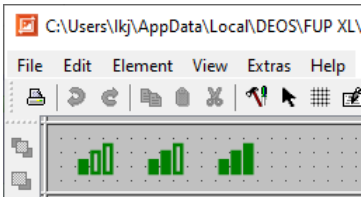
14. Next, we use the “Status” element. Link it to the “Input”, go to “Expanded” tab, click “Symbol assignment from process” button and set the graphic files for the state “0”, “1” and “2”.



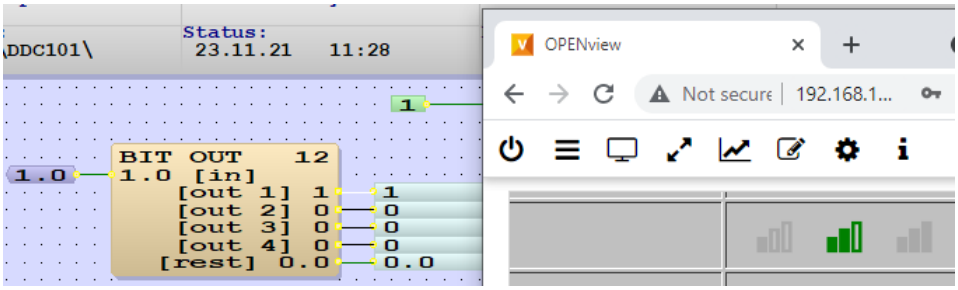
15. We can also use “LockSwitch00” for the multistate point. Link it to the “Input”, go to “Expanded” tab, set “Image is printed with this value” to “0”, and then set the “Image if switch is pressed” and “Image if switch is not pressed” to show if you’ve selected the mode or not.



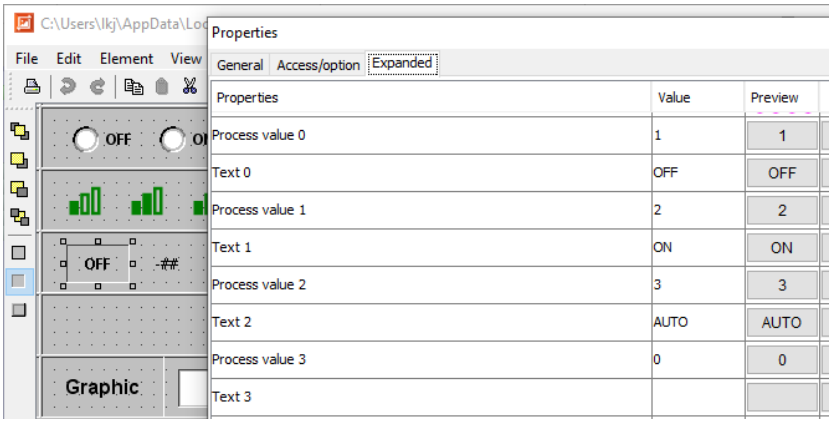
16. Now copy and paste it 2 times. Set “Image is printed with this value” to “1” and “2”, and then set the “Image if switch is pressed” and “Image if switch is not pressed” to show if you’ve selected the mode or not. In this example, we use it to set the FCU fan speed control to “Low”, “Middle” and “High”.



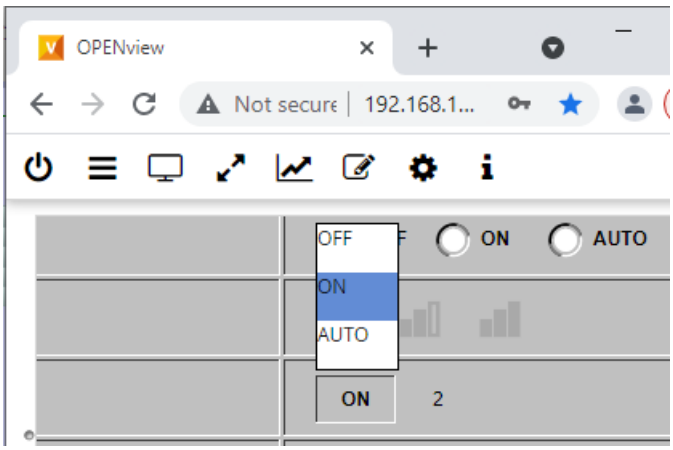
17. In OPENview, you can now see the FCU fan speed graphically, and you can change it by clicking on the icons.



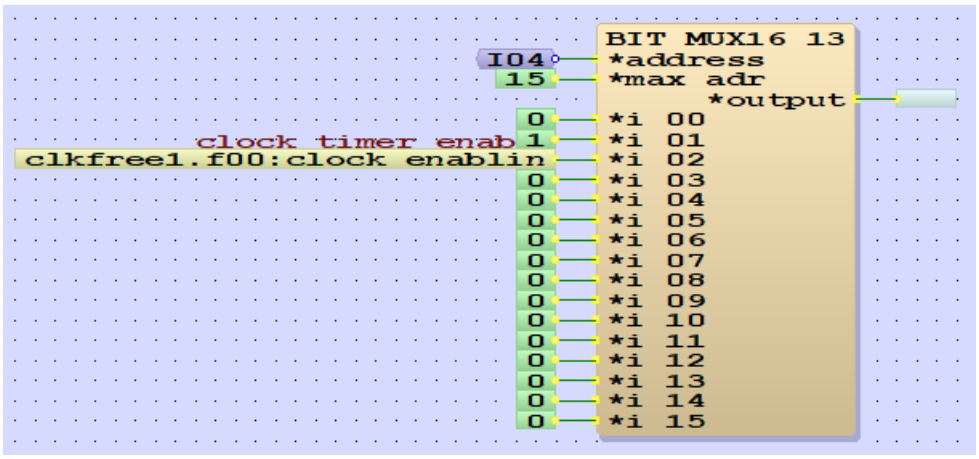
18. The “TextOption00” element is a good and simple way to view/control multistate point value, but the value must start from “0” and in sequence. It is not suitable sometimes, for example, in BACnet integration, where the MSV (multistate value) object the value start from 1.
19. In this case, we can use “TextOption01” element, where you can freely assign the “value” and “text” that you want to use in the drop-down menu.



20. In the example above, the text “OFF”, “ON” and “AUTO” are used to represent value “1”, “2” and “3”. For values that you don’t use, set the text to blank (i.e. empty).



21. Instead of using the “BIT_OUT” module, you can also use the “BIT_MUX16” module, to send the corresponding command to the output directly, based on the UI point value.



22. In the example above, the “output” is 0 (i.e. OFF), when the UI value (I04) is 0. It is 1 (i.e. ON) when the UI value is 1, and the clock timer output (either 0 or 1, depending on the time schedule) will be sent to the “output” when UI value is 2.
23. Finally, you should be able to create graphic to view/control multistate points in different ways easily.