Plant dP control at more locations

Where plants are controlled by a dP measurement somewhere in the network, they sometimes has more alternatives from which the dP can be controlled. The measurement used may be automatic from SCADA or a manual operator decision. Either way the control point and measurement value should be reflected in TERMIS Operation.

The task is to implement a dashboard where the operator (or SCADA) can see which control point and value is used and to implement this control decision at the plant.

Taksk.

To do this the following steps must be completed:

- The data for control point and value must be available from SCADA in Data Manager
- The nodes must have new attributes for dP defined.
- The plant controlling the dP must have setup formulas for the pressure control node and the pressure change (dP)
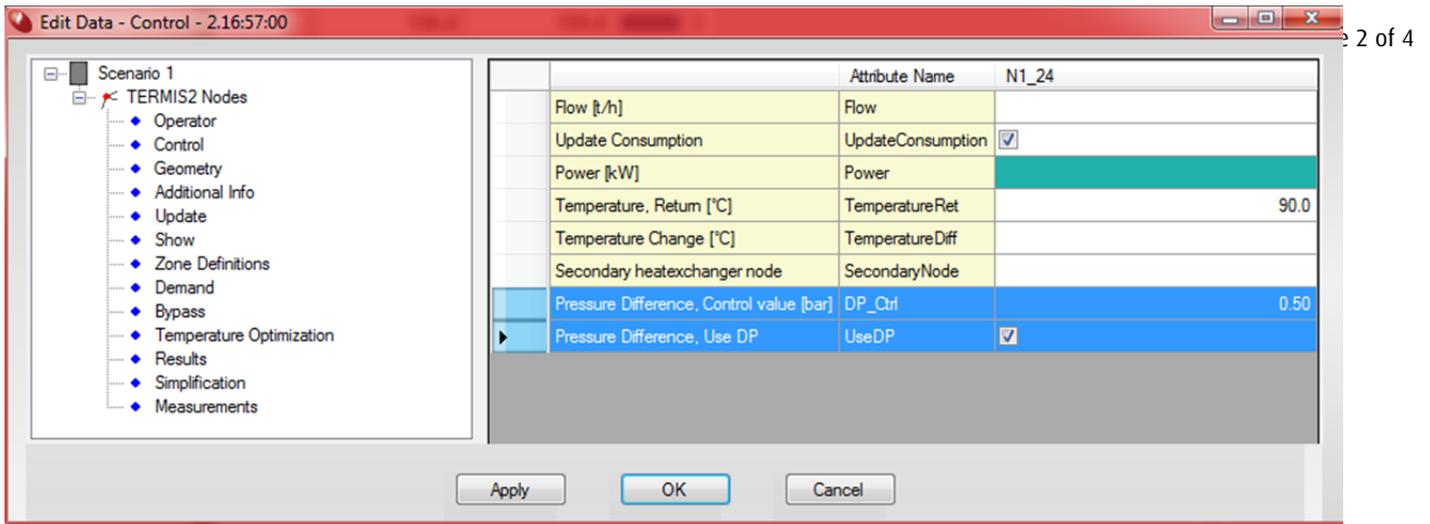
New node attributes.

From the menu Configuration >Layer Data Configuration > Nodes create new attributes for the dP value (double) and the use of the node:
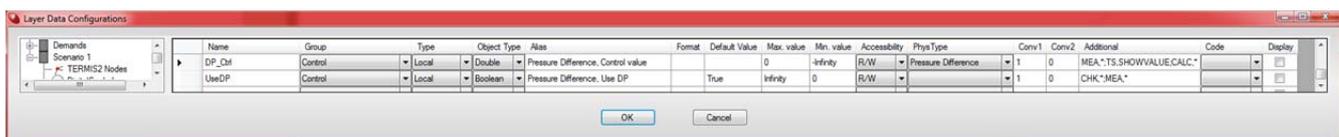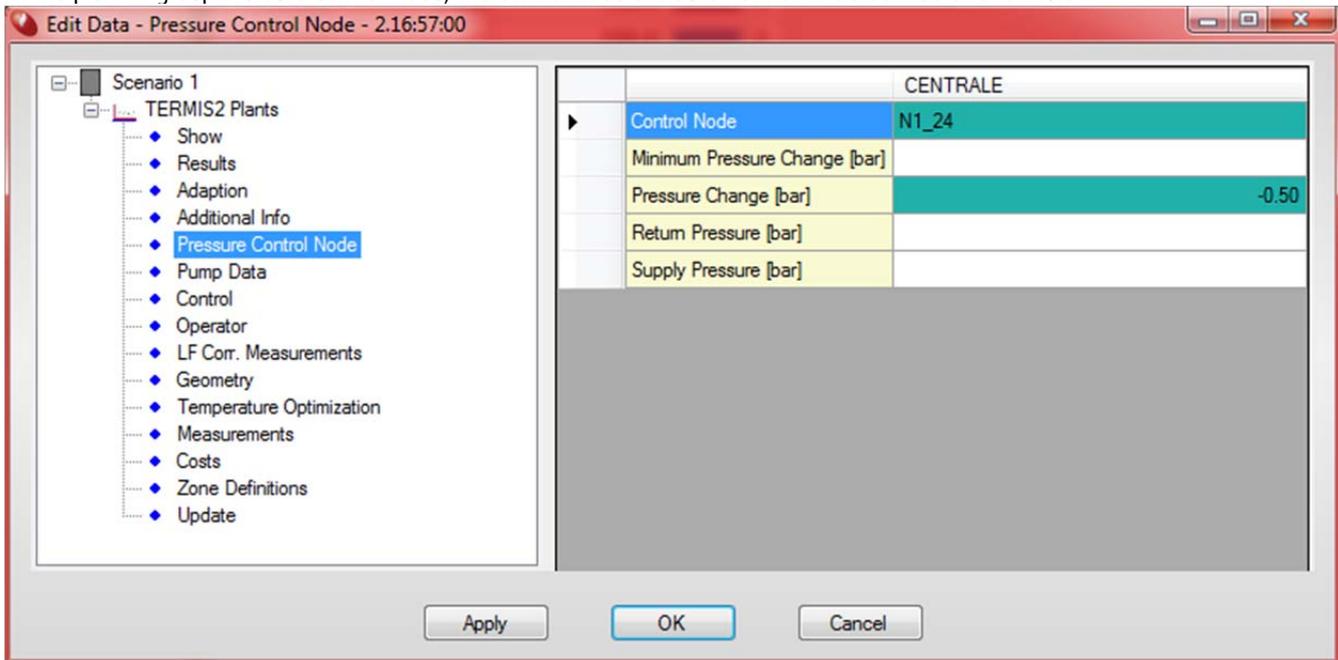

If the values are transferred from SCADA remember to add the MEA,* to Additional

For each node with a dP control, fill in the static data or setup the connection to a Data Manager measurement:

Pressure Control Node at plant.

At the plant in group Pressure Control Node, the Control node attribute not has to be defined as a formula:


The Control Node formula looks like this :

IF(UseDP, "ID", (IF(GET(Scenario 1,N1_31,UseDP), "N1_31", (IF(GET(Scenario 1,N1_24,UseDP), "N1_24", (IF(GET(Scenario 1,N_55,UseDP), "N_55", "DefaultNode")))))))

The IF formula tests if the first parameter is True - if so it returns the second parameter. If the first parameter is False it continues to the third parameter which in this case is a new IF formula etc.

The pressure change formula looks like this:
IF(UseDP, -DP_Ctrl, (IF(GET(Scenario 1,N1_31,UseDP), (GET(Scenario 1,N1_31,DP_Ctrl)*(-1)), (IF(GET(Scenario 1,N1_24,UseDP), (GET(Scenario 1,N1_24,DP_Ctrl)*(-1)), (IF(GET(Scenario 1,N_55,UseDP), (GET(Scenario 1,N_55,DP_Ctrl)*(-1)), "DefaultValue")))))))
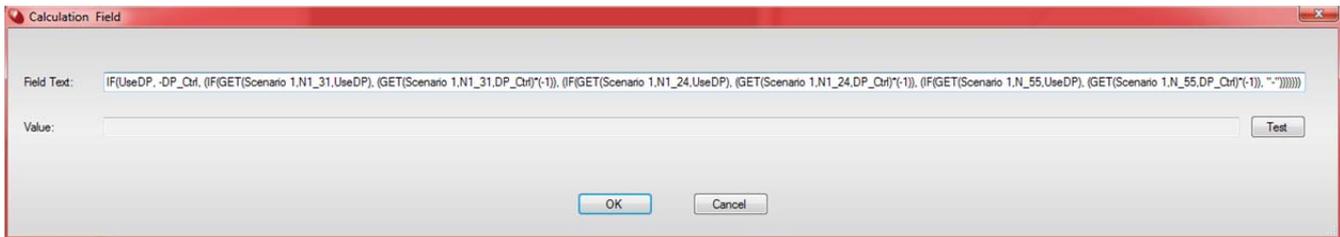

Again the IF formula looks up the True / False value for the check mark and returns the DP_Ctrl value * -1. If more UseDP check marks are set, the formula will use the first one that is True. If no check marks are set the formula should return a default node and a default value.

SETTING UP THE DASHBOARD

To display and control this function from a dashboard attribute data fields and attribute checkboxes should be set up to reflect the active dP:

KNOWLEDGE BASE

The attribute data field is configured like this:
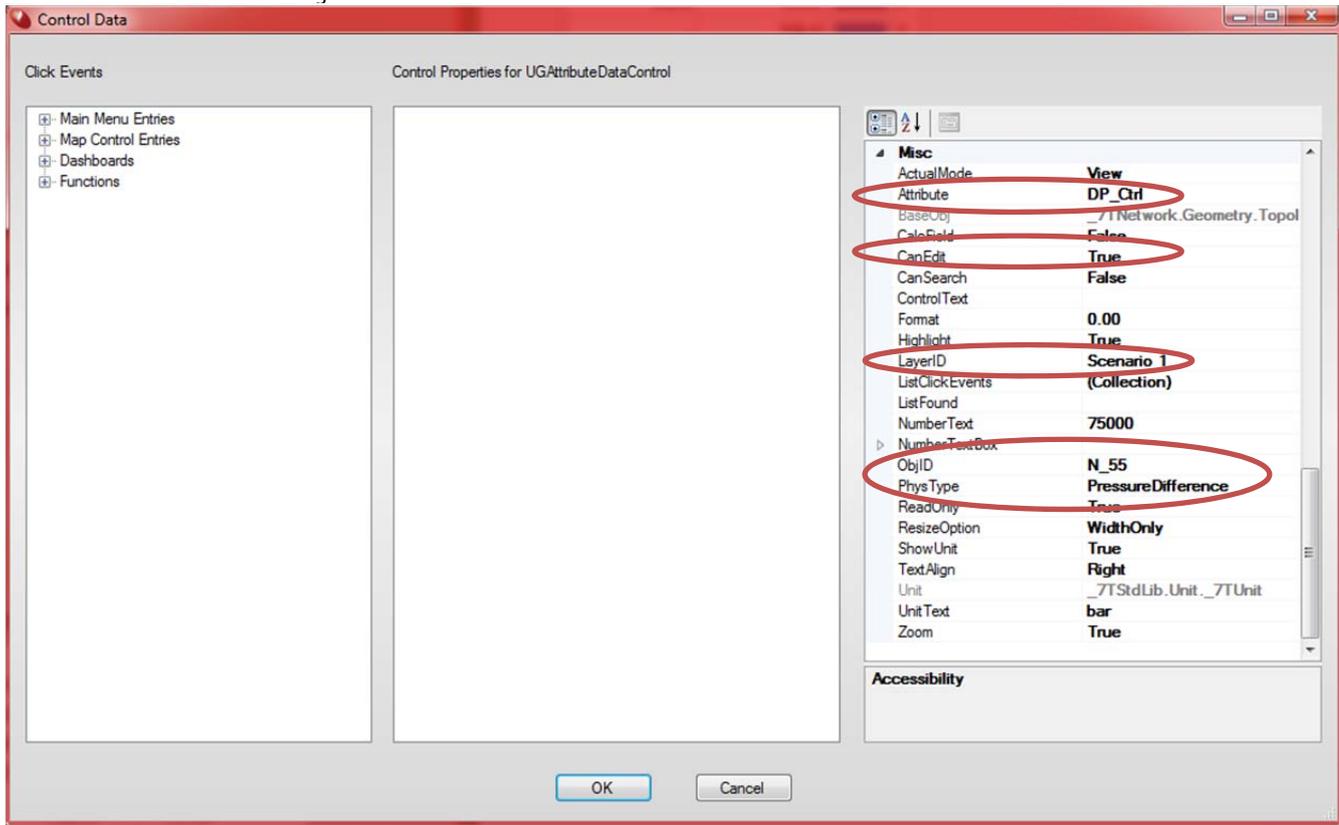
If the set point value is allowed to be changed by the operator set the Can Edit to True. If the value comes from SCADA it should be false.
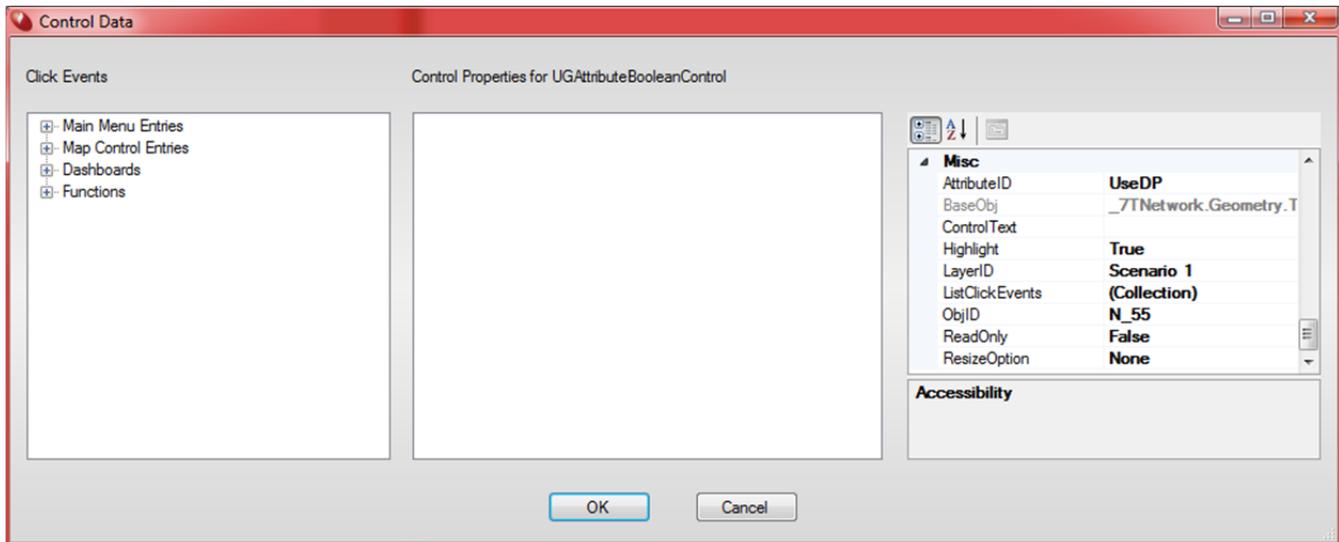
The attribute checkbox refers to the attribute ID UseDP.