Commandable object

This Example shows the functionality of handling outputs using the Priority Array (Commandable Objects).

The SAIA PLC writes with Priority 16 into the Priority Array.
An HMI writes with Priority 8 into the Priority Array.
In emergency cases priority 1 is used to set the Present Value to 100% via Priority 1 .

The Enable flags are used to enable or clear the Fields in the priority array.
0 = clear corresponding prio array by writing "NULL" in it
1 = write the corresponding PLC value in the prio array

The resulting present value is used for the physical output.

If you do the implementation in that way every BACnet Client is seeing what happens to your output and you can also use properties like "out of Service" on the BACnet side.

Detailed configuration.

Control_valve_pos register is connected to the BACnet Control_valve_pos
(AO 0) Analog Output 0 object --> Present Value.

The Analog Output object is commandable so that you can overwrite its value
from BACnet devices using different priority.

Make sure that there is no direct connection to the Control_Valve_pos register inside of your PLC program, because this would overwrite periodically the
values which are coming from BACnet side.

Normal condition:
HMI_switch_Auto_Manual "OFF" and Antifreezing_thermostat "OFF"
PID_OP is written into Control_valve_pos via BACnet priority 16
Priority1 = Null
Priority8 = Null
Priority16 = PID_OP
Result Present value = PID_OP

HMI manual condition:
HMI_switch_Auto_Manual "ON" and Antifreezing_thermostat "OFF"
HMI_manual_value is written into Control_valve_pos via BACnet priority 08
Priority1 = Null
Priority8 = HMI_OVR_VAL
Priority16 = PID_OP
Result Present value = HMI_OVR_VAL

Antifreezing thermostat ON condition:
HMI_switch_Auto_Manual "ON" or "OFF" and Antifreezing_thermostat "ON"
Antifreezing_override_value is written into Control_valve_pos via BACnet priority 01 --> highest Priority to avoid others from accessing this value
Priority1 = AntiF_OVR_VAL
Priority8 = HMI_OVR_VAL or NULL
Priority16 = PID_OP
Result Present value = AntiF_OVR_VAL