



As part of a term project, two students (Benjamin Lösch (left) and Sandro Ludolini (right)) at Nordwestschweiz college integrated Belimo MP-Bus actuators and their connected sensors on BACnet using a PCD3 controller from SAIA-Burgess Controls.

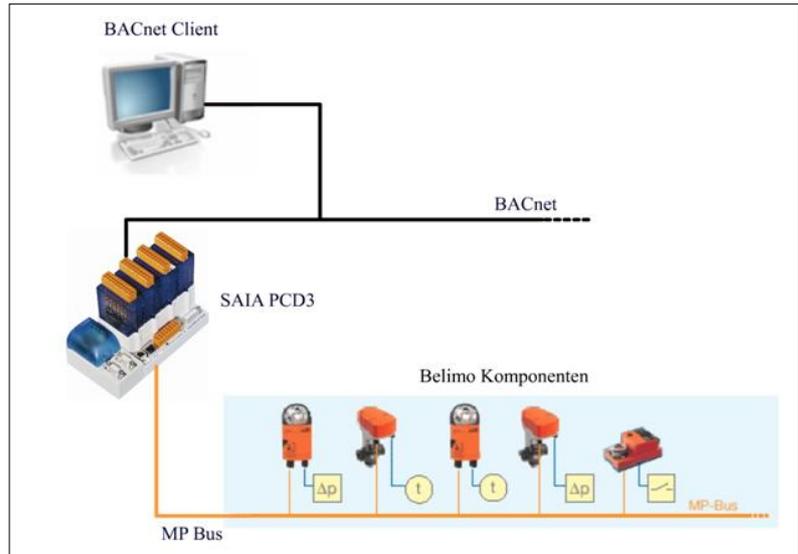
The first challenge confronting the students was to integrate the SAIA PCD3 in Nordwestschweiz college's BACnet multivendor system and make the Belimo MP-Bus devices installed on the MP-Bus operable via the SAIA PCD3.

They then had to design a user interface at BACnet level to enable these Belimo MP-Bus devices to be operated, controlled and monitored.

Another of the problems facing them was that the user interface had to be programmable with BACTalk.

Students at Swiss technical college integrate Belimo MP-Bus actuators on BACnet using an SAIA PCD3 as part of a term project. The advantage: End-to-end communication transparency from management level right down to the sensors and actuators.

MP-Bus successfully integrated on BACnet



Belimo MP actuators and their connected sensors were recently integrated on BACnet using a PCD3 controller from SAIA-Burgess Controls.

Nordwestschweiz college operates a BACnet multivendor system on which programmable controllers from a variety of manufacturers can be interoperated. A programmable logic controller with a BACnet interface - the PCD3 - is now also available from SAIA-Burgess Controls in Murten (CH). This PCD3 controller is equipped with an MP-Bus module that allows up to eight Belimo MP-Bus devices to be connected directly and digitally: MP/MFT(2) damper actuators, MP fire damper actuators, MP/MFT(2) valve actuators, FLS window ventilation actuators or MP-capable VAV controllers. The Belimo devices on the MP-Bus can thus be accessed directly and digitally from any BACnet client and controlled accordingly (see graphic above).

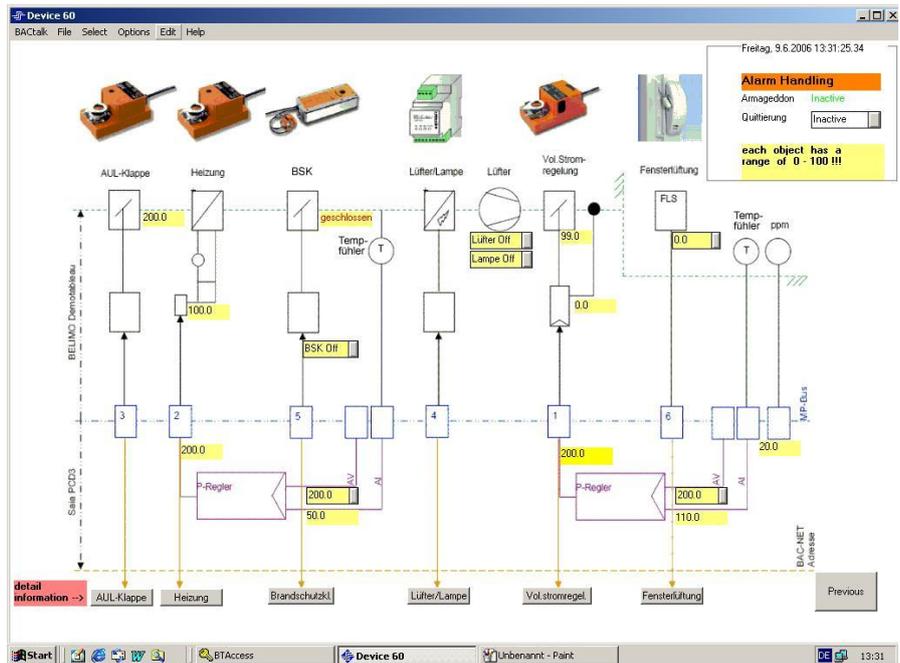
It is possible to connect one sensor to each MP/MFT(2) actuator. This sensor can be a passive resistance sensor (Pt1000, Ni1000 or NTC), an active sensor (e.g. with a DC 0...10 V output) or a switching contact. This provides a straightforward way of digitising the analogue sensor signal with the Belimo actuator and transferring it via the MP-Bus to the SAIA PCD3, where the corresponding values are scaled and if necessary also transferred to BACnet.



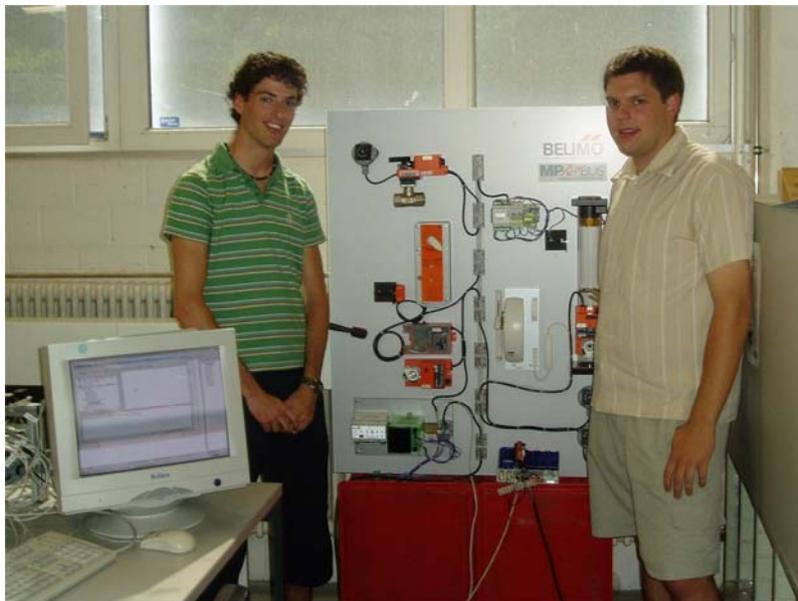
Benjamin Lösch explains how it works

The first phase of the term project entailed connecting the PLC (PCD3) to the Belimo devices on the MP-Bus, which are mounted on a demo panel. In this particular application, the SAIA PCD3 controls six MP devices on the MP-Bus. Separate controls loops were programmed for two of these MP devices - an actuator with a characterised control valve and a VAV Compact controller. Their job is to ensure that the valve and the controller are supplied with the correct set-point, depending on the room temperature.

The next step was to install the BACnet objects that are necessary for communication between the user interface on the PC (BACTalk) and the controller (PCD3).



Finally, two graphical user interfaces were programmed with BACTalk. The first interface shows all BACnet objects on one page. The second (screenshot above) shows the main diagram and the detailed sub-diagrams together with their respective BACnet objects.



Benjamin Lösch (right) and Sandro Ludolini (left), the two proud students, standing in front of the demo panel with the Belimo MP actuators at the final presentation of their term project. The Belimo actuators connected to the SAIA PCD3 via the MP-Bus can be controlled at any time and without any problems using the BACnet interface.

BACnet is a communication protocol for building automation and control networks. It is equally ideal for use on both the management and the automation level, especially for HVAC, light control, safety and fire alarm technology. BACnet was developed by ASHRAE in collaboration with end customers and engineers, and is recognised as an ANSI and CEN standard. Although American by origin, BACnet is increasingly gaining a foothold in Europe as an interoperable standard.

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