

## METASYS INTEGRATION WITH S-E SMARTSTRUXURE AND BACNET: N2 ROUTER

### ABOUT THE CUSTOMER

Skaun municipality is in Sør-Trøndelag county, 25 km from Norway's 3rd largest city, Trondheim. Skaun municipality has a population of 7,668 people. Schneider Electric won an energy performance contracting project for the public buildings, schools, and nursing homes within the municipality.



### PROJECT REQUIREMENTS

One goal was to deliver a uniform Building Management System for all the public buildings in the municipality in order to improve operational efficiency through uniform training and procedures for all municipal buildings. Consistency and ease of operation help generate energy savings - which was the primary goal for the overall project. Automation and energy management and monitoring technology, along with the requisite training and support services, were required to maximize energy savings.

Two of the municipality's buildings, Borsak Kindergarten and Rossvollheimen Nursing Home, were previously instrumented with Johnson Controls Metasys® building automation systems utilizing the Metasys® legacy N2 field bus technology. A project requirement was to bring these two buildings into the uniform user interface implemented for the entire municipality.

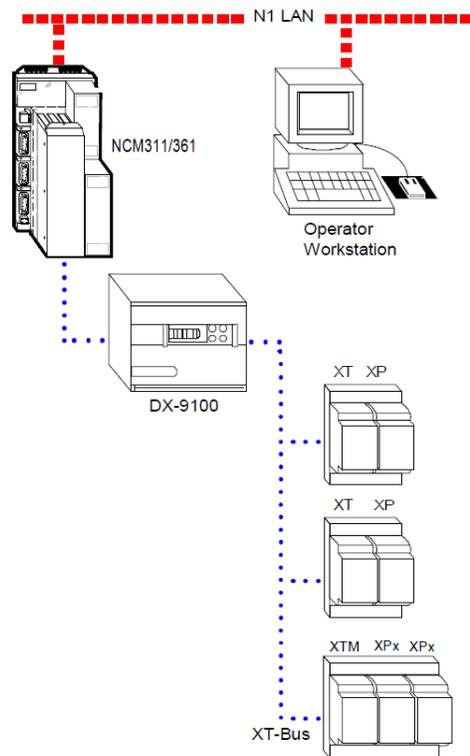
### IMPLEMENTATION

Enterprise Level Automation was provided by a Schneider Electric StruxureWare Enterprise Server. Building level automation was provided by Schneider Electric StruxureWare Automation Servers at each location. The savings are measured in an Energy Operation system from Schneider Electric.

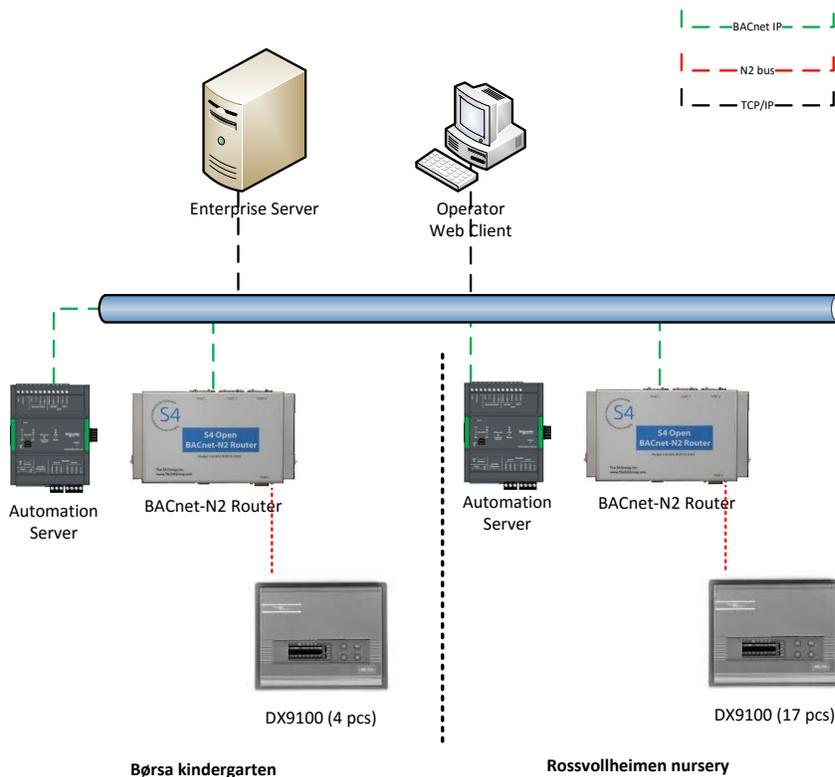
## CASE STUDY: PROVIDING SKAUN MUNICIPALITY IN NORWAY A UNIFIED BAS INTERFACE

The Schneider Electric team initially considered replacing the legacy Metasys® technology with current Schneider Electric technology. However, the cost of new equipment, installation, and commissioning was deemed too high, even when considering the energy savings that could be gained. Inspection of the legacy system found that even though it was aged, the N2 bus was within manufacturer specifications and all N2 devices were fully functional. The optimal solution for these buildings was determined to be integration to the legacy JCI Metasys® system provided by an S4 Open: BACnet-N2 Router in each building.

Because the building operator wanted to completely replace the Metasys® user interface and it was determined that the small amount of time required to perform the integration would not adversely affect the comfort of building occupants, the decision was made to decommission the Metasys® NCM supervisory controllers and Metasys® Operator Workstation as part of the integration process. Because of this decision, the unique ability of the BACnet-N2 Router to co-exist between the legacy Metasys® head end and the SmartStruxure Automation Servers was not required or used on this project. Instead, one of the integration



tasks was to move all scheduling, global variable support, and other services and functions of the NCM supervisory controller to the Schneider Electric Automation Server in each building.



The Configure Wizard built into the S4 Open Management Console (the user interface for the BACnet-N2 Router) accurately discovered the N2 devices and assigned the appropriate S4 device templates that provided the BACnet point mapping. When the Configure Wizard completed its task, the discovered N2 devices were automatically published as emulated BACnet devices to BACnet under a virtual BACnet network. Point lists were automatically assigned by the Configure Wizard for N2 devices that were application specific controllers. Since the DX-9100 systems are each custom programmed, the Schneider Electric team used the S4 Open Metasys® Configuration File Conversion Utility to generate custom Device Templates exactly matching the point assignments for each DX-9100. The integration team then assigned the custom Device Template to the device object in the BACnet-N2 Router for each DX-9100.

The BACnet-N2 Routers are BACnet servers and the StruxureWare Automation Servers are BACnet clients. At this point, the standard BACnet discovery process in the SmartStruxure systems was utilized to bring the information into the new SBO environment. In the future, as Metasys® N2 field devices need to be replaced, they will be migrated to Schneider Electric MS/TP devices on a new field bus that brings them directly into the SBO environment.

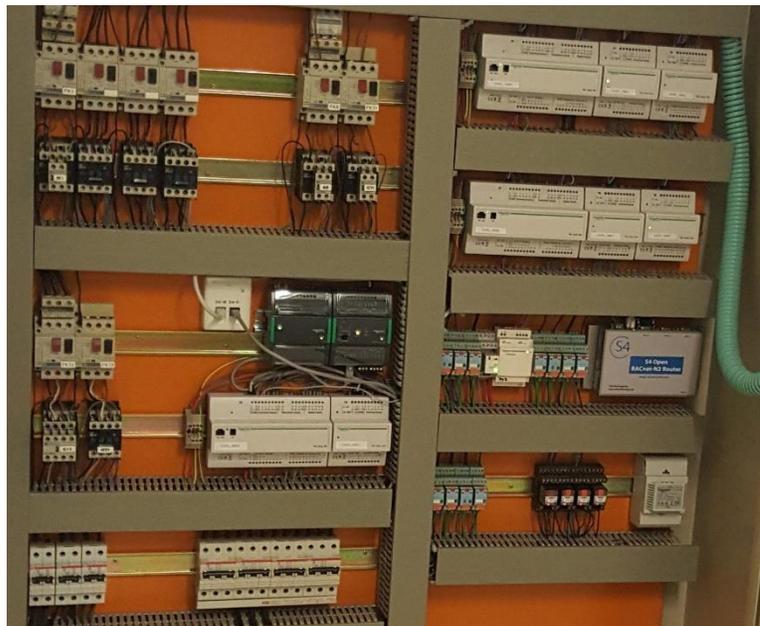
### OUTCOMES

Outcomes were measured through interviews with the client after the integration of these two buildings was completed and the user interface was provided via Schneider Electric's SmartStruxure. The building operators observed that they can operate their installations in an easier way than with the legacy system and, as a result, use less time for inspection. The goal of a single, uniform building management system for all buildings in the municipality has been achieved.

*"The municipality of Skaun is so far satisfied with the deliveries and the collaboration with Schneider Electric and look forward to get confirmation on the agreed energy savings in coming years.*

*Another factor is that the project has led to significant renewals of technical*

*facilities and building parts. This is also considered as very important for the municipality." Skaun Municipality*





Kjetil Moe, Operations Manager at Rossvollheimen nursing home.

## ABOUT SCHNEIDER ELECTRIC

Schneider Electric is a global leader in energy management and automation.

For more information about this project, or to discuss your needs for similar projects, contact:

Thomas Lassen, Project Manager [thomas.lassen@schneider-electric.com](mailto:thomas.lassen@schneider-electric.com)