LONMARK® INTERNATIONAL

CASE STUDY

ISDE Upgrade and Integrate BMS System for APILAC Building with LonWorks™ Based Technologies, Reducing Energy Consumption and Costs

Port Administration of Lazaro Cardenas SA de CV (APILAC) wanted to upgrade and integrate its current systems into one BMS system. APILAC is based on a four story building, divided into two wings per floor where offices, meeting rooms, and other areas accommodate a number of employees.

For five years the building has been operating with several independent systems for HVAC, lighting and fire detection. Having each system work independently without an integrated management system has made it difficult to maintain and improve the energy efficiency of each system. As a result, the building managers issued a public tender to find a partner to help integrate these systems through a centralized BMS platform.

Challenge

Port Administration of Lazaro Cardenas SA de CV turned to ISDE, a pioneer of home and building automation, as well as street lighting to solve and provide a solution for the following requirements:

- Provide a Management System to integrate each electrome chanical system into one platform in order to be managed by only one SCADA.
- The integration must be as “native” as possible, reducing the use of gateways to make the communication optimal between each system.
- Make use of each electrical element installed by using controllers that can be optimized and be integrated to the Control System.
- Have a good plan in place to minimize disturbances to its employees.
- The final Control System must be flexible for future installations, because management wants to re-invest the savings generated back into the system.

Solution

To automate the building, ISDE chose to work with the proven LonWorks networking platform. With LonWorks, ISDE was able to integrate multiple system components such as lighting, HVAC, fire central panel, power monitoring and SCADA using a common system architecture and infrastructure – in essence, one set of wires through which all components are attached and can share common information. Data can travel from any point on the network to any other point with no single point of failure, embedding high-level security and allowing full component interoperability in a peer-to-peer fashion. The comprehensive system provides an intuitive and simple way to manage each system. For example one can control setting the scheduler, the temperature and lighting set point as well as limit the chillers capacity, monitor the AHU, chillers and VAVs.

According Ismael Duarte Correa – Head of the General Service Department of APILAC, “This BMS has allowed us to control the maximum demands, reducing our costs considerably, by modifying the time of use for the HVAC equipment.”

The Result

Thanks to LonWorks, the system can be maintained long term and can be expanded in the future because it based on the standard (ISO/IEC 14908), which makes it interoperable and supported by many manufacturers.

ISDE was able to reduce the changes of the electromechanical and lighting elements installed, by using the controllers from each manufacturer. For example for lighting control it uses ISDE controllers and for HVAC it utilizes Distech Controls controllers.

- The FTT-10A free topology reduced significantly the need to centralize all the controllers, making it possible to install each controller next to each area.

Cesar Martinez Fernandez, Technical Manager of ISDE & Apilac BMS Project Leader, quotes:

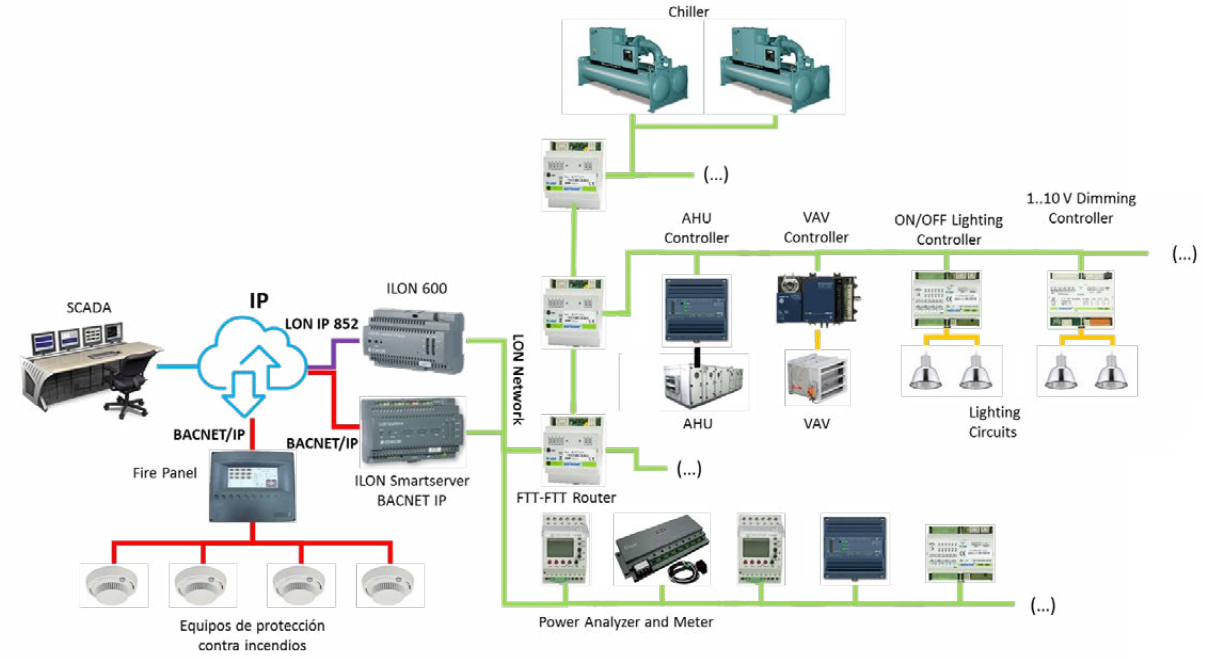
“Most of the installation we worked are based on new buildings, so it was a beautiful challenge for us to implement a control system inside a building that not only is constructed, but also have people working inside and with no planning of doing any kind of reform.

Thanks to the LonWorks technology we were able to solve any kind of challenge that were introduced, like installing the controllers next to the areas or cabling through all the Air ducts, lighting cable, etc, without the need of extending the cable.”

Other results include:

- A reduction in installation and cabling costs by using the communication network inside each building.
- After a short period of time the building manager has seen a decrease in power consumption. The energy savings for both light and HVAC is estimated to be between 15% and 20%.
- Reduce in resources for the maintenance department because they can see what’s going on in the building by checking the SCADA.
- A decrease in employee complaints because an equilibrium was achieved between energy savings and comfort levels for the workers.

Diagrama de integración APILAC



LonMark International

2901 Patrick Henry Drive
Santa Clara, CA 95054, USA
Tel: +1 408-938-5266
www.lonmark.org

Contact:

For further information, please visit
ISDE
Cesar Martinez
+34 91 643 70 75
cesarmf@isde-ing.com
www.isde-ing.com