



BACnet[®] Delivers For German Postal Service

By Frank Schubert

The Deutsche Post (the German postal service) is now using a distributed BACnet[®] data server to connect its facilities all across the country. At present 120 logistics centers are tied into a data processing service center in Frankfurt/Main via modems and public telephone lines. Data from all the facilities is transferred using the BACnet/Point-To-Point (PTP) EIA-232 protocol, then made Internet-accessible via a Web application.

Energy Management

The Deutsche Post AG is one of the biggest real estate owners in Germany. More than 8,500 properties are operated by their subsidiary, Deutsche Post Immobilien Services (a facilities management company). The buildings include not only administration buildings but also freight and postal distribution centers.

These logistics centers consume huge amounts of energy. An analysis of the

current building operation, for example, showed that leaving the roller shutters on the delivery platforms open longer than needed in the winter was causing a significant waste of energy. The heat loss was forcing undue operation of the heating system to maintain the space temperature setpoint.

To improve energy efficiency of the logistics centers, four pilot projects were set up in 2005. These involved collecting the outside temperature, the indoor tem-

peratures in as many as five to 10 locations, depending on the size of the facility, and the electricity, gas and water meter readings.

For these projects, the author's firm provided a BACnet data server, which is a system that allows the collection of meter readings using the M-Bus protocol (M-Bus is a European standard protocol for meter reading, EN 13757) and the direct reading of physical analog and binary I/O for the various temperature sensors.

The BACnet data server provides three communication options:

1. A simple internal Web server for local monitoring and setup;
2. BACnet/IP for connection to local BACnet operator workstations; and
3. BACnet/PTP for connection over the public telephone network using either analog or ISDN modems.

About the Author

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BACnet was chosen for intersystem communication because it is the only communication protocol specifically designed for building automation and includes detailed specifications of the data to be exchanged (BACnet objects), specifications that are missing in most other communication protocols.

The use of public phone lines is a cost-effective solution to the problem of connecting remote devices to a central management station.

To provide this central management, ITENOS (International Telecom Network Operation Services GmbH), a subsidiary of German Telekom, operates the activeOperation system. In a large data center in Frankfurt/Main, facilities from both within and outside of Germany are connected via phone lines and/or the Internet.

The collected data are stored in databases and made available to the Internet using HTML Web pages. This allows building owners to log in to activeOperation at any time to analyze meter readings and to display current temperatures.

In the future, it will be possible to define alarm conditions and to notify operating staff of malfunctions.

The analysis module of activeOperation allows comparisons between different facilities and the extraction of data to generate reports and statistics.

Shortly after the first four pilot projects were launched, the energy consumption and related costs became transparent and the

first actions were taken within the facilities to lower the energy consumption. One important action was to close the roller shutters as soon as the trucks leave the ramps, especially during winter.

Current Project Status

At the conclusion of the pilot phase, which ended at the start of this year, the installation of the BACnet interfaces in the remainder of the 120 facilities began. At present, all 120 installed BACnet data servers are logically connected to activeOperation and the analysis and comparison of the conditions in the various logistics centers has begun.

Future Plans and Options

The first step in the project was to set up and begin collecting data. In the next steps energy analysis will become the focus, alarms will be set up to annunciate excess consumption, and the operational staff will be notified via e-mail and/or text messaging to cell phones of building system malfunctions.

The system can potentially provide other benefits. Since the energy markets in Europe are now open, building owners may be able to take advantage of real-time pricing and negotiate lower costs for certain volumes, for example. It may be possible to optimize energy use based on weather conditions. Finally, it should be possible to monitor and manage energy consumption proactively. ●

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