*PROBLEMS*

*IN*

*INTELLIGENT BUILDINGS*

ALI MOHAMMAD SALIH

P-RM0007/09

Problem # 1 (reduces energy consumption)

Lonix technologies

The COBA Building Operating System

Many of building surrounding world suffering from the high usage of energy or energy consumption and the one of problems that is faced the intelligent building is the high energy consumption and how to reduce this consumption. The solution of this problem is provided by the Lonix technology, this technology is provide for intelligent building and all kind of buildings such as offices, commercial buildings, public properties and various residences.

Lonix technologies used to reduce the energy consumption through controls the building systems s that is used energy such as heating, cooling, ventilation, consumption metering, leakage alarms, intruder alarms and fire alarms. This technology used intelligence by distributed it into smart control notes, Lonix modules. Access control and video monitoring are easy to integrate into the open solution. This systems integration together allow different systems inside building to work together seamlessly and to be controlled according to needs and situations.

There are other part of this technology is called COBA Building Operation System provide the windows to all building management and with security system through a standard interface

***System architecture:***

This system (LONIX) have four layers that is different functional – systems are implemented using distributed control techniques and standard open communication networks. The solution is easy, reliable and flexible to use in building. This technology allows the system structure to be modified and extended at minimal cost.

1. ***SERVICE LAYER:***

This layer is easy and secure access to building functionality in a standard ways by using the COBA buildings operation system that is provide convenient usage, simple maintenance and security services. Like professional service providers can monitor alarms, optimize the building functionality and provide remote diagnostics of al devices and systems

1. ***MANAGEMENT LAYER***

The role of the management layer is to provide a uniform view to all systems, this layer contain also the Building Operating System, COBA, is the server software that handles the following tasks:

1. Conveying dynamic data from all systems to any application and vice versa
2. Conveying alarms to the desired media and application/ user
3. Trending of history data from all systems
4. Ingenious management of user rights based on predefined user roles

The COBA system includes a structured object models of all building, its part and space, and its connect between all parts of building and effect areas of each building system.

1. ***CONTROL LAYER***

In this layer the intelligence of the integrated solution is distributed into smart control nodes, and by the LOINX modules the all systems in building are easy to configure using the graphical system.

1. ***FIELD LAYER***

the field layer does not include any intelligence. Field devices comply with industy standards, such as PT-1000 for temperature, 0-10 V for other sensors and actuators.



***Building problems # 2***

**Introductions**

The last years the price of energy going to rise and the emission of carbon monoxide also raise, building managers must focus on minimizing energy consumption in order to keep their business ventures competitive. Over 20 years ago, occupancy sensors emerged as an effective technology to reduce energy waste in unoccupied spaces.

To solve this problems using the Objective video and this system will help users to save more energy and also reduce the emission of carbon as a second stage. For example if only 10% of all office building in US used Intelligent Business Automation with their lighting controls that is lead to save energy about 3.5 terawatt- hours of electricity or $290 million.

**Example applications for the Intelligent Building Automation solution from ObjectVideo include:**

1. **Space Management**

***Problem***

Many corporate real estate organizations do not have an effective way to measure actual space utilization.

***Intelligent Solution***

The objective video provides the intelligence generate real time occupancy count that is providing the data over the time to all buildings part by using workplace management software. Improving the accuracy o efficiency of workplace space management.

1. **Automatic Door Control**

***Problem***

Automatic door controls are increasingly pervasive in commercial and other buildings, yet sensors for these systems are typically able to only detect a presence near the door, resulting in wasted openings and unnecessary energy loss.

***Intelligent Solution***

Door systems can be made far more effective by ensuring doors are only opened when necessary and left closed when people are merely passing by implementing an intelligently-enabled sensor to determine actual ingress and egress.

1. **Energy Management**

***Problem***

The U.S. Department of Energy reports that lighting and HVAC represent 40% of the average commercial building’s electric bill.

***Intelligent Solution***

Objective Video-enabled sensors reduce the extra power time to virtually zero by intelligently determining the occupancy of each space at all times. In addition, most buildings are heated, cooled and supplied with fresh air independent of actual occupancy. Implementing intelligent automation to help manage heating and cooling systems will result in significant energy savings.