

Monitoring and Control Cluster on Smart Buildings/Smart Spaces Eamonn Roarke



**If your not Monitoring IT
You can't Manage IT**



What will we look at?

1. Overview of the system
2. Managing the Facility
3. Managing the Data-centre



WWW

Overview

1

• Robust client server based software suite

2

• Monitoring, Control, and Alarm Solution

3

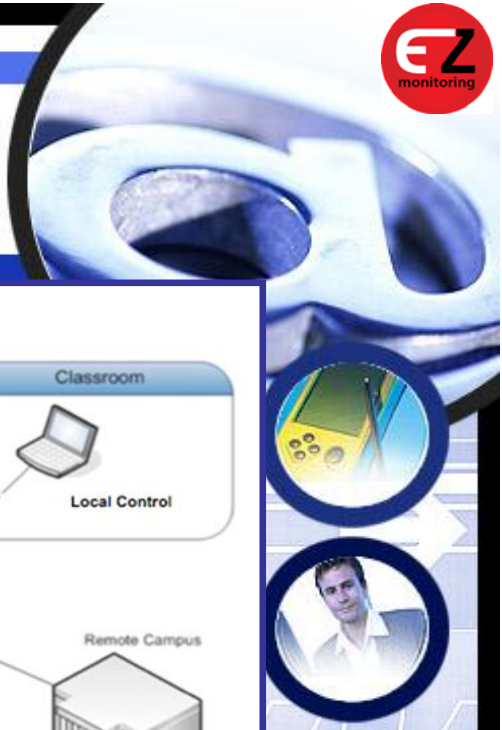
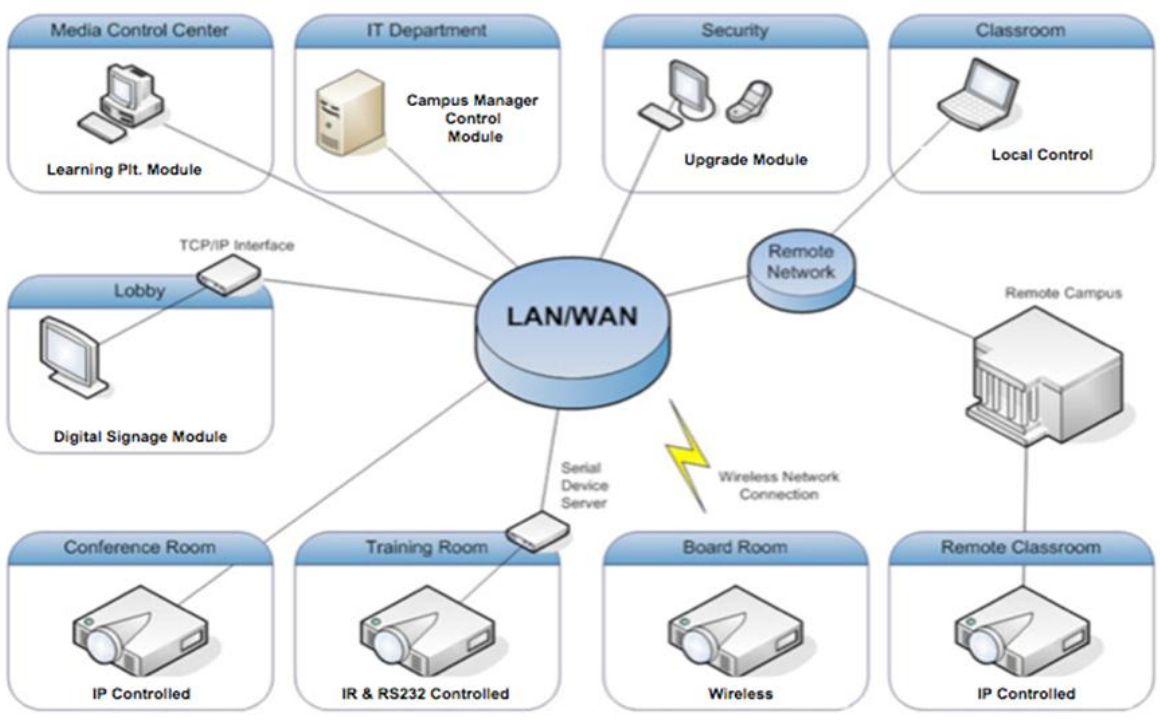
• Reduces hardware costs

Predictive & Proactive Maintenance

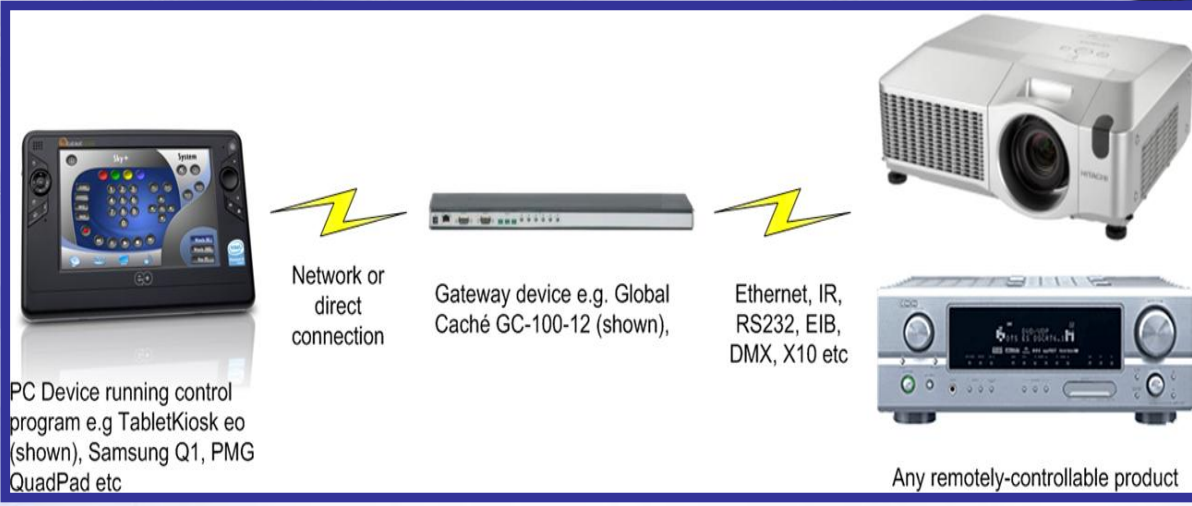


Predictive / Proactive Maintenance

CampusManager™



Eliminate hardware



First truly converged AV product, incorporating!

- Centralised Content Management
- Room control
- Interactive Whiteboard Applications
- Equipment & PC Monitoring
- IPTV (on Demand TV)
- Digital Signage
- Room Booking & Management System
- Video Conference Scheduling System
- Live Seminar Recording

In a SINGLE Software Solution





Expertise!

Customizable Client
Server Software

- Define a Topology
- Define a Form
- Create a end-user
Look & Feel
- Deploy

Protocols

TCP / IP

RS 232

RS 485

Infrared

Modbus

Canbus

SNMP

Cobra Net

Various equipment

Temperature Humidity Sensors

Air Handling

UPS's

Servers & Load Balancing

Electricity Metering /
monitoring

Thermal Imaging Cameras

Video Projector

Plasma Screen

Over 200,000 + pieces of
equipment



**\$500m American University of Cairo
(New Cairo)**



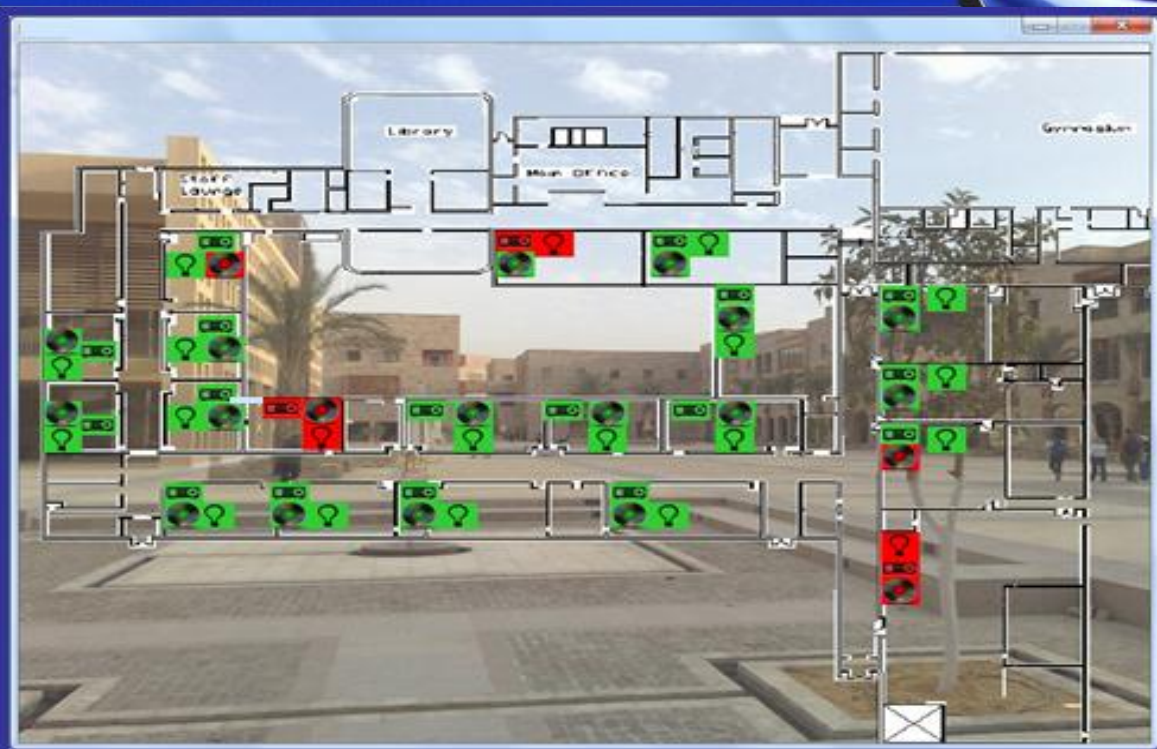
AUC Facts

- 250 Lecture Rooms
- 400 Rooms in total
- Large Data Centre
- Hybrid – Turbine / Solar / Generator

- 240 Live Channels IPTV



Birds Eye View AUC



Managing Data Centres

Mission Critical Monitoring Model:



CONSISTENT, ACCURATE, REAL-TIME INTEGRATED DATA IS ESSENTIAL TO ALL 3 PHASES



What?

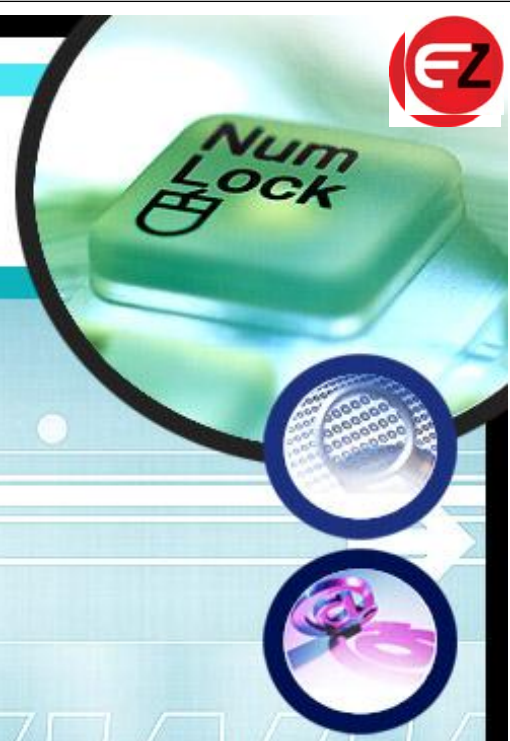
- Real time monitoring of critical systems
- Works with all open protocols
- Client Server technology
- Web clients
- Easy to deploy
- Easy to configure
- Email / SMS alarms
- Hardware Agnostic
- Transport Layer Independent





Development Areas!

- **Data Centres**
- **Point of Presence PoP**
- **Computer Rooms**
- **Energy Audit / Monitoring**
- **Telecom Substation**
- **Gas Substations**
- **Electrical Substation / Thermal / Delta T**
- **Broadcast / TV Transmission Masts**



Monitoring Dashboard



24/08/2010 09:51:34 - Alarm in Colo 1 - Water Detected Between AHU13&AHU17 - status : Normal
 24/08/2010 09:51:35 - Colo 2 - Generator Running, Call Tony 07796020309 - status : Normal
 24/08/2010 09:51:40 - Colo 1 - Generator Fault, Call Tony 07796020309 - status : Normal
 24/08/2010 09:51:45 - Colo 1 - Generator Running, Call Tony 07796020309 - status : Normal
 26/08/2010 16:28:28 - Alarm in Colo 2 - Water Detected Between AHU1&AHU4 - status : Low Critical
 26/08/2010 16:44:08 - Alarm in Colo 2 - Water Detected Between AHU1&AHU4 - status : Normal
 26/08/2010 16:44:15 - Alarm in Colo 2 - Water Detected Between AHU1&AHU4 - status : Low Critical
 26/08/2010 16:44:20 - Alarm in Colo 2 - Water Detected Between AHU1&AHU4 - status : Normal



Alerts

Depending on rules applied, each alarm is emailed and an SMS message generated

Event Log - each alarm populates here in real time

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Control & Monitor

Un-interrupted Power Supply (UPS)

User can drill down on each device and get further information

Air Handling Unit Drill Down

UPS Status

UPS ON

Line Present

On Battery

Battery Low

Bypass On

Overload

Overtemperature

Replace Battery

Alarm

Ups Locked

0

INPUT VOLTAGE

L1 241 V

L2 243 V

L3 241 V

OUTPUT LOAD

L1 24 %

L2 28 %

L3 20 %

BATTERY

100 %

425 V

OUTPUT BYPASS

L1 236 V L1 240 V

L2 236 V L2 242 V

L3 234 V L3 244 V

500 Hz 500 Hz

Air Handling Unit Drill Down

Control Air Temperature: 22.7

Control Air Humidity: 36.4

Temperature Setpoint: 22.5

Humidity Setpoint: 42.9

Unit Status: **Unit On**

Control Demand: 0

Unit Alarm Reset: 0

Refresh Error List





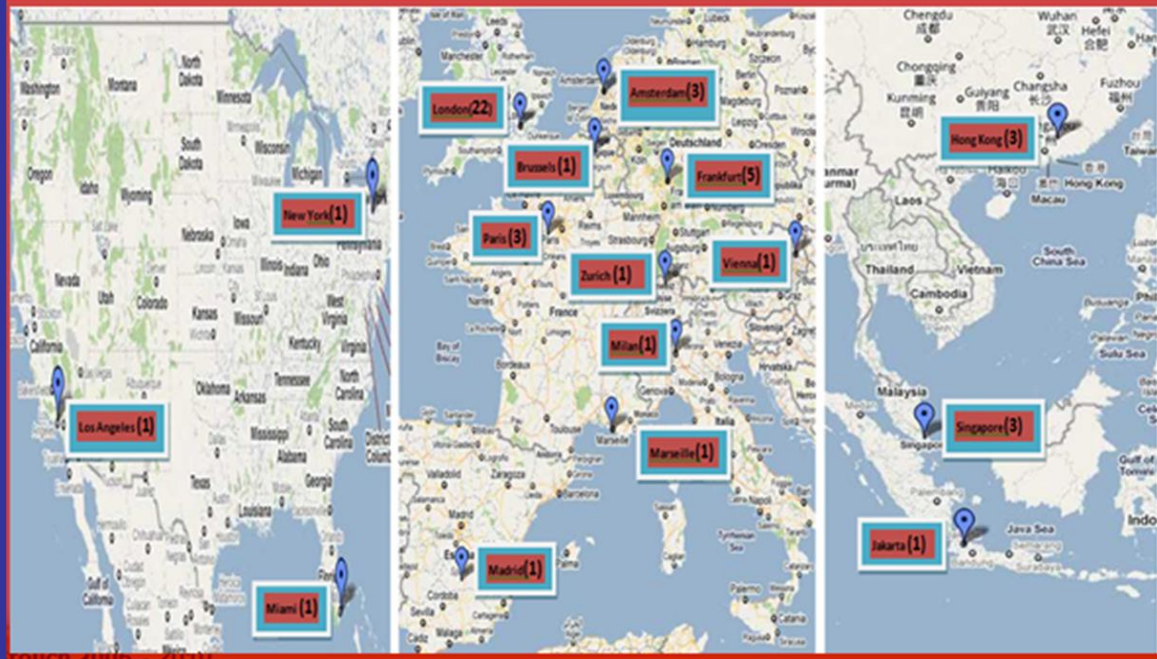
Phase 2 Global PoP Sites



USA

EUROPE

ASIA



Other Industry Sectors Thermal Imaging



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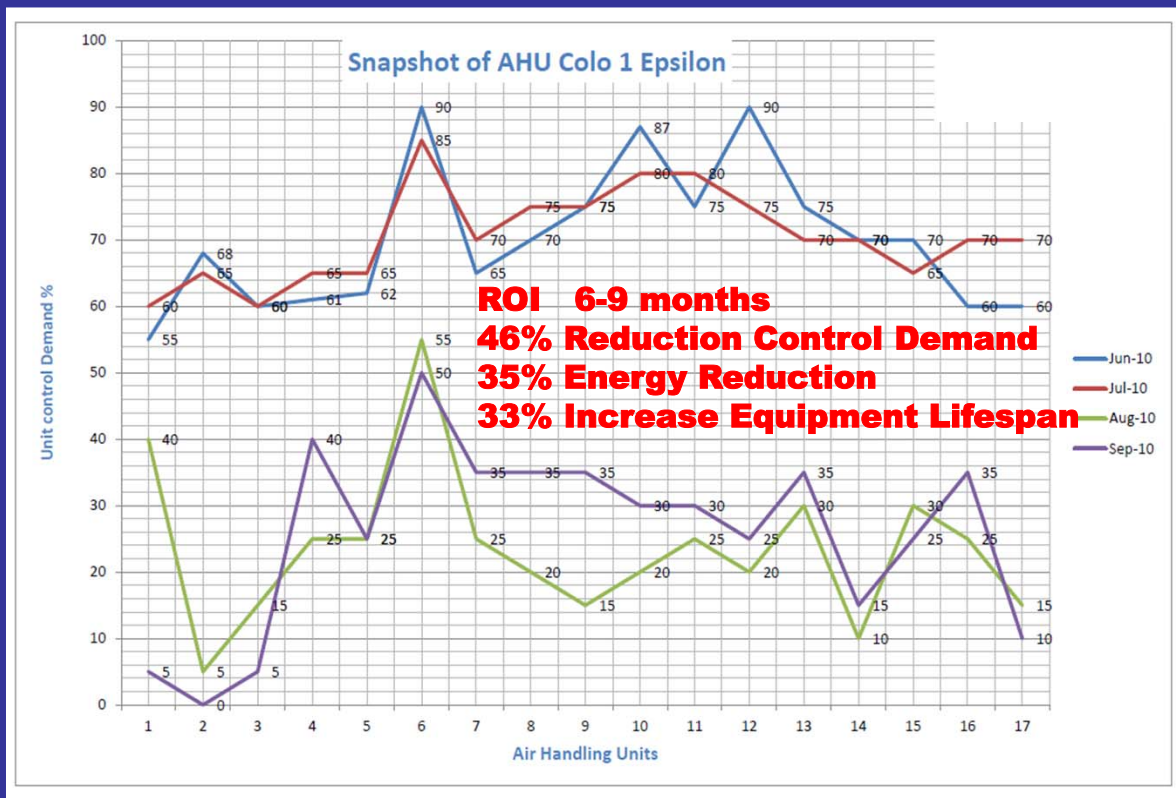
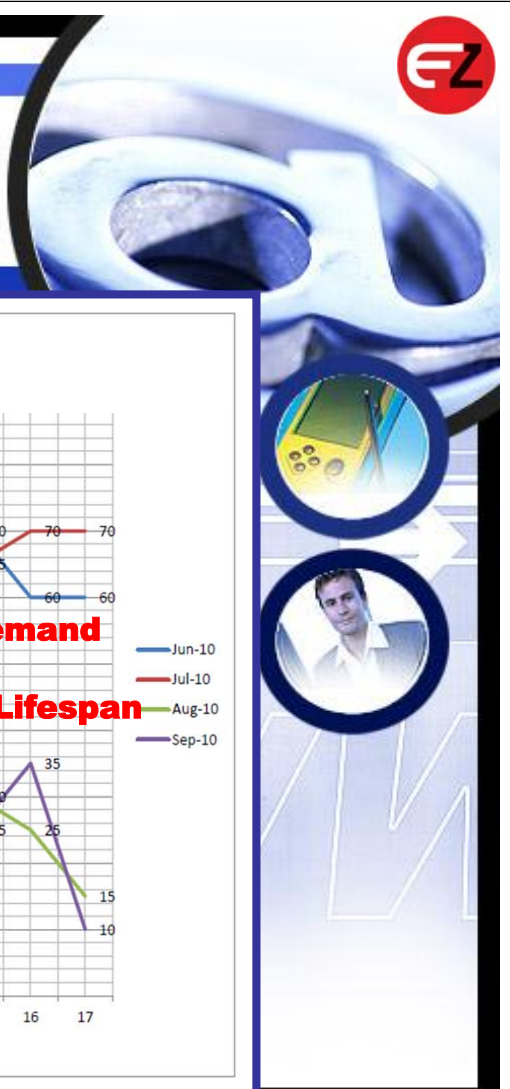


Examine transformers, comparing similar connections under similar loads.





Return On Investment



Eamonn Roarke
 Mobile +353 86 8143301
Eamonn.roarke@eZmonitoring.eu
www.ezmonitoring.eu

Eamon Roarke Twitter @eroarke
eZmonitoring Twitter @ezmonitroing



Questions