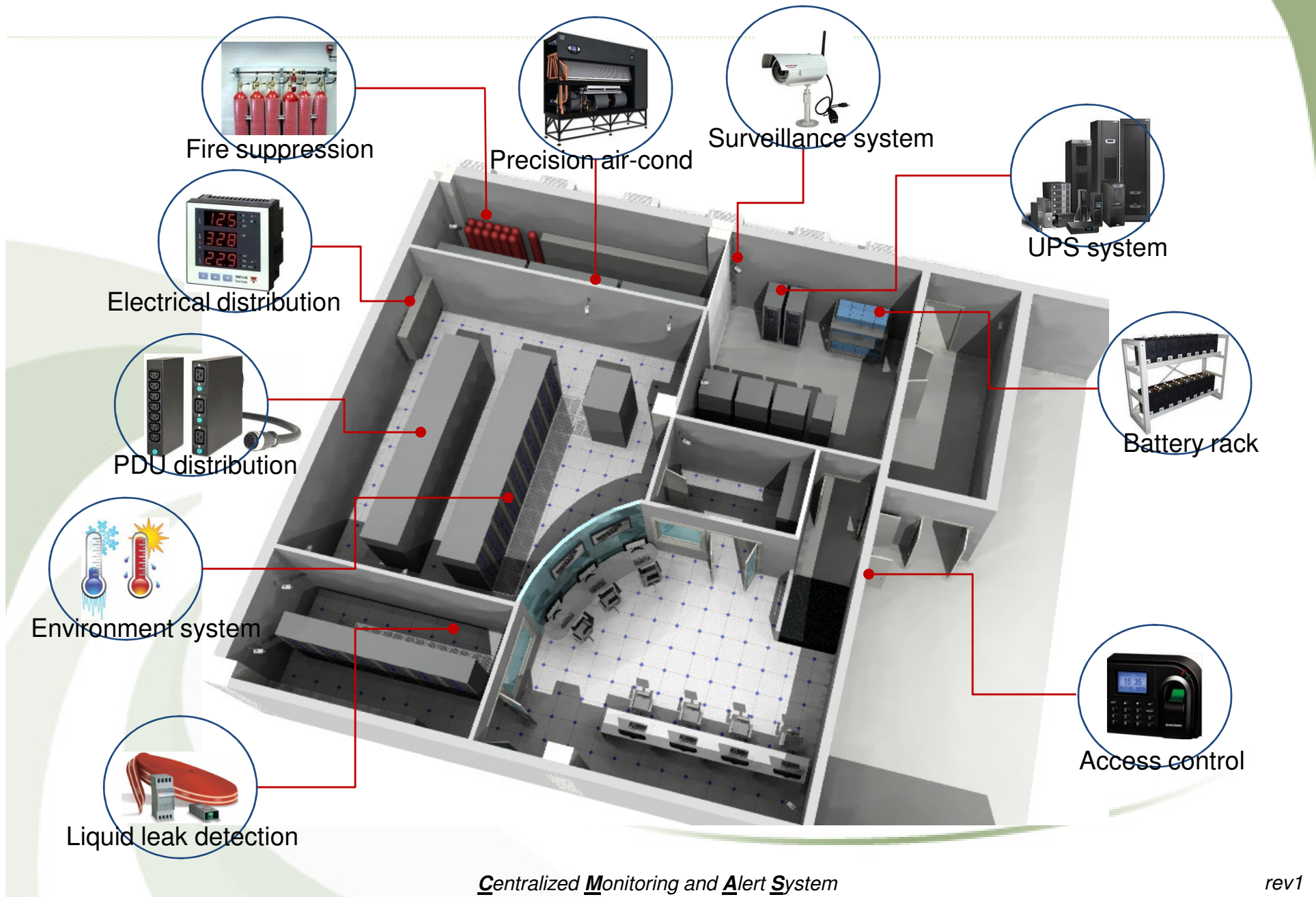


# M&E FACILITIES



# IN FACT CHALLENGES

- Power consumption is unbalancing between phases

Energy useless.

- Not easy to do summarization on which system/ which period of time/ how critical alarm...almost happened so far

Inefficiency on spare-part management, maintenance planning...

- No idea about true operation live-time per system/ device, when will be right time to upgrade/ extent the system capacity

Not meet the business demand as right time

- Each unit on same systems has different true operation time

It required different maintenance schedule which caused costs inefficiency

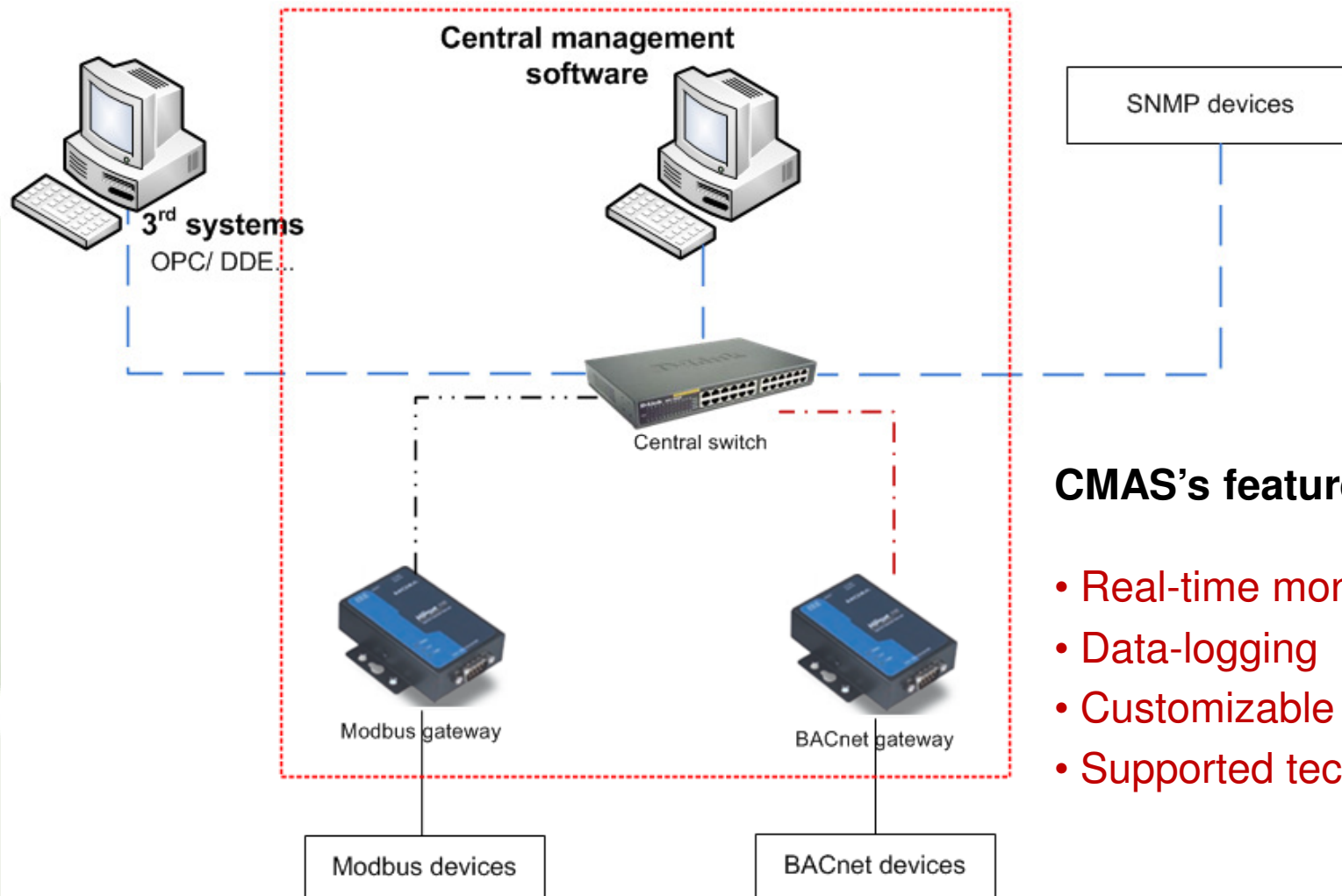
- How frequently/ long the real environment required by system has been satisfied? If not, how big different per case?

Either energy useless so much or environment condition is not compliance.

- As quick as possible to find out what root caused alarm happened, what right resolution to fix alarm...

Minimized downtime on business operation

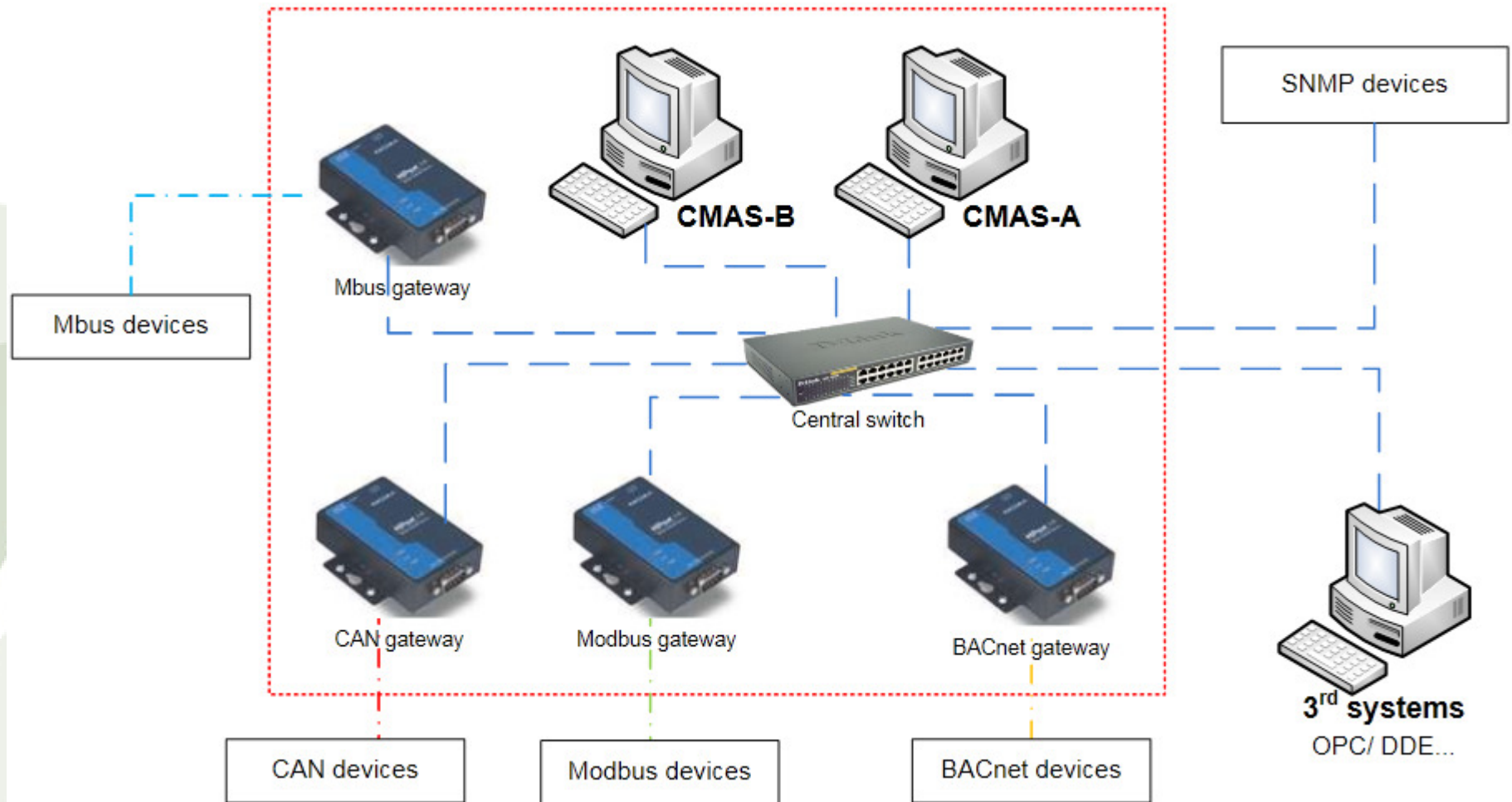
# OVERCOME CHALLENGE?



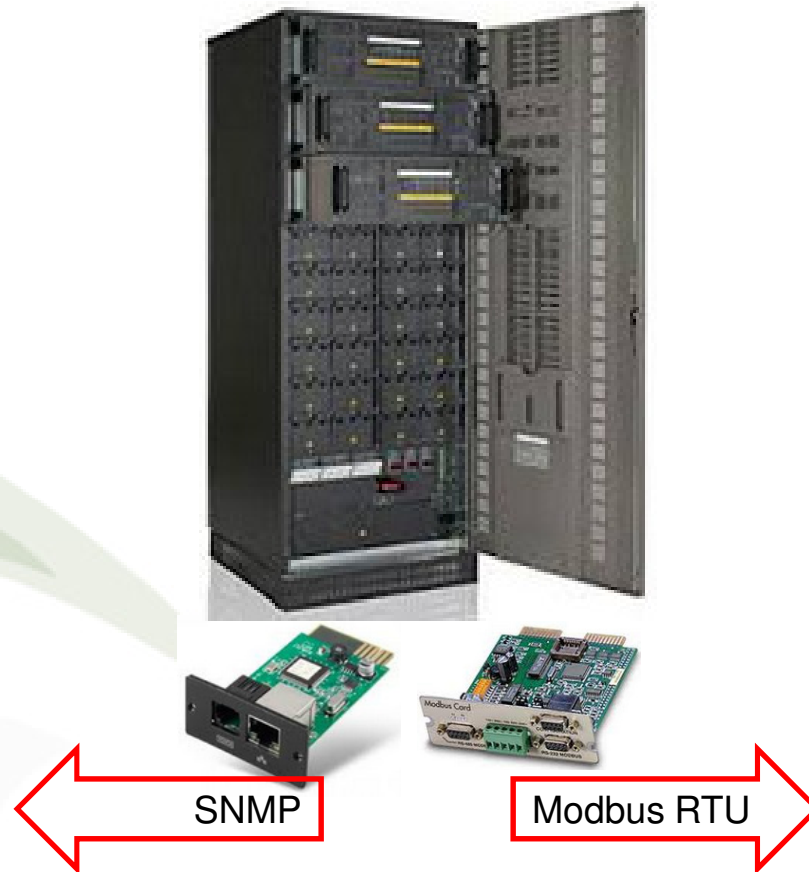
## CMAS's features

- Real-time monitoring
- Data-logging
- Customizable report
- Supported technical document

# REDUNDANCY – STATION LEVEL



# REDUNDANCY – FIELD LEVEL



# PROTOCOL SUPPORTED

Channel: Building\_Amp

Main Details Event Graph Table

Device Type: Test

Device Number: AB\_SLC5  
AccesPCI

I/O Type: ADEU12V3  
AmpDIO

Channel #: DDE\_Client

Timing: Diamond  
ICP7000

Offset: Koyo305

Channel Cmd: LabJack  
LabJack\_U12

Conversion: MComputing  
MODBUS

History Length: 3600 points

Persist Length: 0 points

Channel: Building\_Amp

Main Details Event Graph Table

Device Type: Test

Device Number: MODBUS  
Modbus

I/O Type: ModbusASCII  
ModbusRTU  
ModbusRTU2

Channel #: Modem

Timing: mydevice2

Offset: National\_Inst

Channel Cmd: NI\_435x

Conversion: ODX  
OPC  
Opto

History Length: 3600 points

Persist Length: 0 points

Channel: Building\_Amp

Main Details Event Graph Table

Device Type: Test

Device Number: NI\_435x  
ODX

I/O Type: OPC  
Opto

Channel #: PCX\_4264\_AC  
RFScada

Timing: Sample

Offset: Sensoray\_SmartAD

Channel Cmd: Serial  
Test

Conversion: TriLogi  
WatchDog

History Length: 3600 points

Persist Length: 0 points



# SNMP CONNECTION

Channel: vd

Apply Discard

Main Details Event Graph Table

Device Type: OPC

Device Number: 0

I/O Type: Synchronous Read

Channel #: 0

Timing: 1 secs

Offset: 0 secs

OPC Specifier: [B3AF0BF6-4C0C-4804-A122-6F3B160F4397];Channel1.Device1.Tag1

Conversion: None

History Length: 3600 points

Persist Length: 0 points

Browse for OPC Item:

- Local OPC Servers (THUAT)
  - Kepware Communications Server 5.7
  - Kepware Communications Server AE 5.7
  - OPCSimulator
  - OPCSysNET DA Server V1.0
- Network

Selected OPC Server:

OPC Item Browser

OPC Server: [B3AF0BF6-4C0C-4804-A122-6F3B160F4397]

Branches:

- All items
  - \_AdvancedTags
  - \_CustomAlarms
  - \_DataLogger
  - \_OracleConnector
  - \_Redundancy
  - \_SNMP Agent
  - \_System
  - Channel1
    - \_System
    - Device1
  - Data Type Examples

Items:

Name	Type	Access
_Statistics		
_System		
Tag1		
Tag2		

Item ID: Channel1.Device1.Tag1

Workspace

CONNECTIONS:

- Local

OPC Quick Client - Untitled \*

File Edit View Tools Help

Item ID / Data Type Value Timestamp

Channel1.Device1.Tag1	Word	1890	14:32:4
Channel1.Device1.Tag2	Word	0	14:10:3

Date Time Event

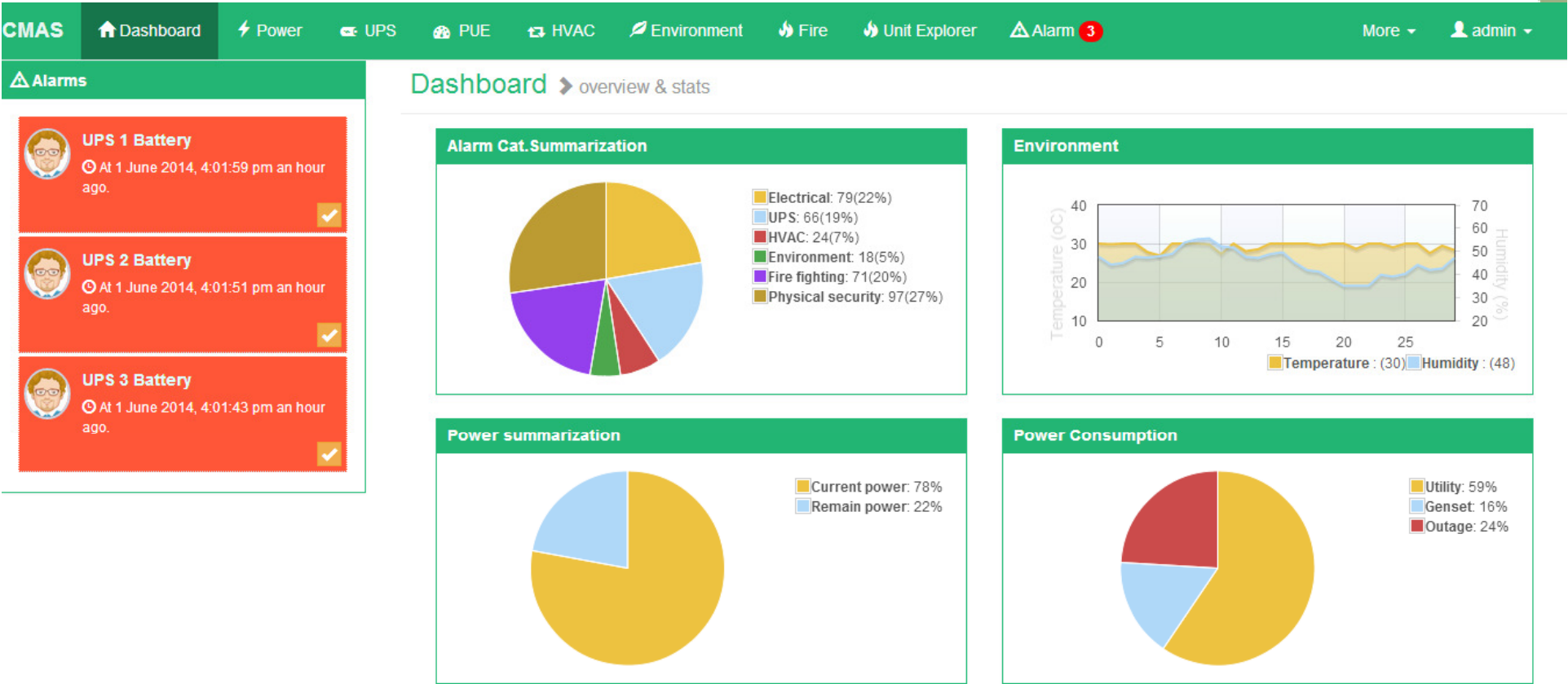
01/08/2013	21:10:38 CH	Added group 'Data Type Examples.16 Bit Device.S Registers' to 'Kepware.KEPServerEX.V5'.
01/08/2013	21:10:38 CH	Added 34 items to group 'Data Type Examples.16 Bit Device.R Registers'.
01/08/2013	21:10:38 CH	Added group 'Data Type Examples.8 Bit Device._System' to 'Kepware.KEPServerEX.V5'.
01/08/2013	21:10:38 CH	Added 4 items to group 'Data Type Examples.16 Bit Device.S Registers'.
01/08/2013	21:10:38 CH	Added group 'Data Type Examples.8 Bit Device.K Registers' to 'Kepware.KEPServerEX.V5'.
01/08/2013	21:10:38 CH	Added 8 items to group 'Data Type Examples.8 Bit Device._System'.

Ready

Item Count: 252

Row	Time	Value
0	13y08m01d 14h32m40.017	1889
1	13y08m01d 14h32m39.019	1887
2	13y08m01d 14h32m38.021	1885
3	13y08m01d 14h32m37.022	1883
4	13y08m01d 14h32m36.024	1881
5	13y08m01d 14h32m35.025	1879
6	13y08m01d 14h32m34.012	1877
7	13y08m01d 14h32m33.013	1875
8	13y08m01d 14h32m32.015	1873
9	13y08m01d 14h32m31.017	1871
10	13y08m01d 14h32m30.018	1869
11	13y08m01d 14h32m29.020	1867
12	13y08m01d 14h32m28.022	1865
13	13y08m01d 14h32m27.023	1863
14	13y08m01d 14h32m26.025	1861
15	13y08m01d 14h32m25.010	1859
16	13y08m01d 14h32m24.012	1857
17	13y08m01d 14h32m23.014	1855
18	13y08m01d 14h32m22.015	1853
19	13y08m01d 14h32m21.017	1851
20	13y08m01d 14h32m20.019	1849
21	13y08m01d 14h32m19.020	1847
22	13y08m01d 14h32m18.022	1845

# DC HEALTH AS OVERALL





# UNIT EXPLORER

CMAS

Dashboard

Power

UPS

PUE

HVAC

Environment

Fire

Unit Explorer

Alarm 3

More

admin

Vietnam

VAB

DC

UPS System

PAC System

PAC-1

PAC-2

PAC-3

Electrical System

MSB-DC

DB-UPS

DB-AC

PDU-A

PDU-B

PAC 1

Channels

Power: 120 kwhCurrent: 20 Amp

Control panel

Auto: ONRun: ON

Alarms history

Status	Name	Description	Priority	Alarm	Reset	Acknowledge	Acknowledged By
Reset	UPS 1 Battery	USP 1 goes to battery mode	Warning	15 March, 2014 8:56 AM	15 March, 2014 8:59 AM		
Reset	UPS 2 Battery	USP 2 goes to battery mode	Advisory	13 April 2014,	15 March, 2014 7:15 AM		

# ALARM ESCALATION

Setting setting & config all features

## Displays

Time range 1 month

## Escalation Profile

Guide

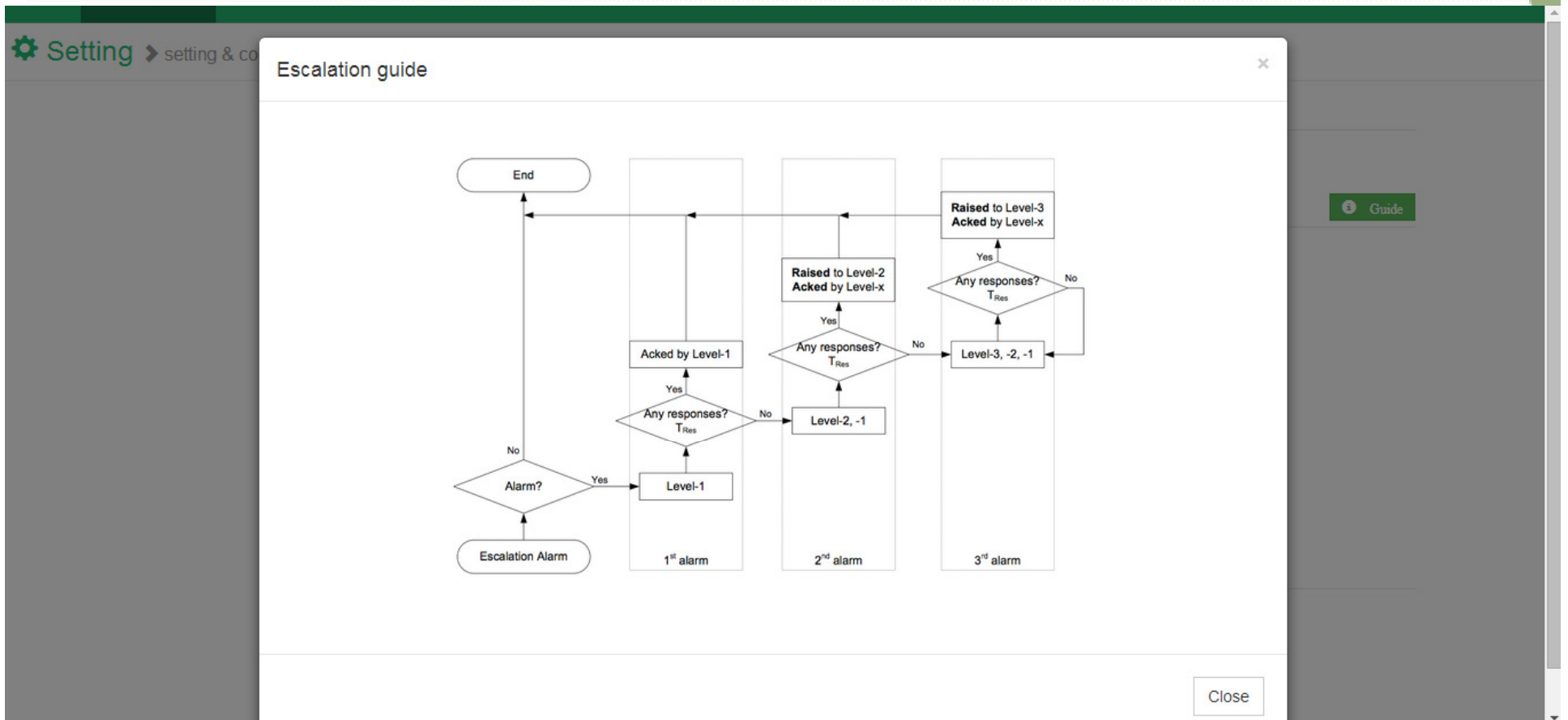
Alarm Priority	Level 1 - Operator	Level 2 - Manager	Level 3 - Administrator
Critical	1st	1st	1st
Warning	1st	1st	2st
Advisory	1st	2st	3st
Log	None	None	None

Reset default

Save

Cancel

# GUIDE IN-PLACE



# TYPICAL SUITED APPLICATIONS



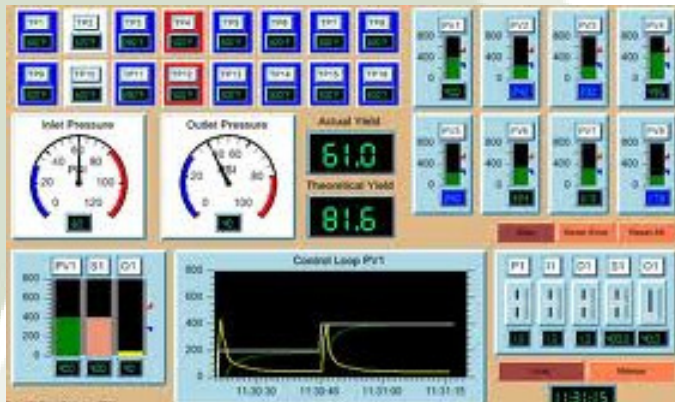
Control room



Data center/ IT room



Telco room/ BTS



Industry process

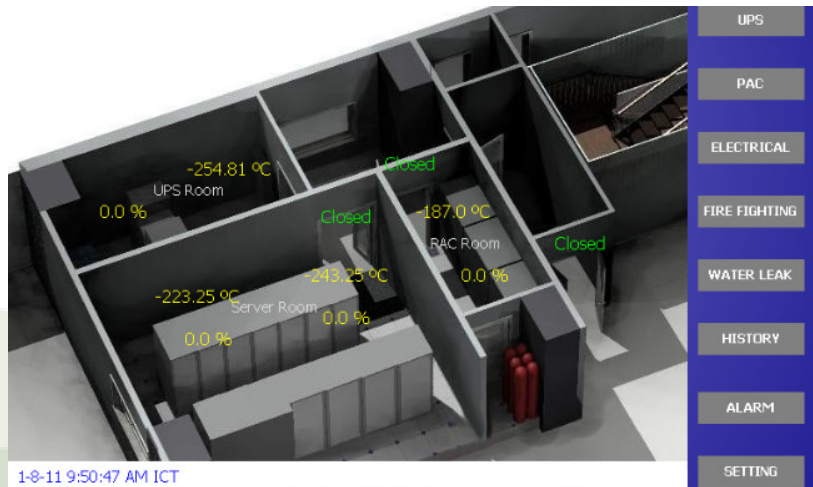


Supermarket facilities



Bank vault

# REFERENCES



Centralized Monitoring and Alert System