

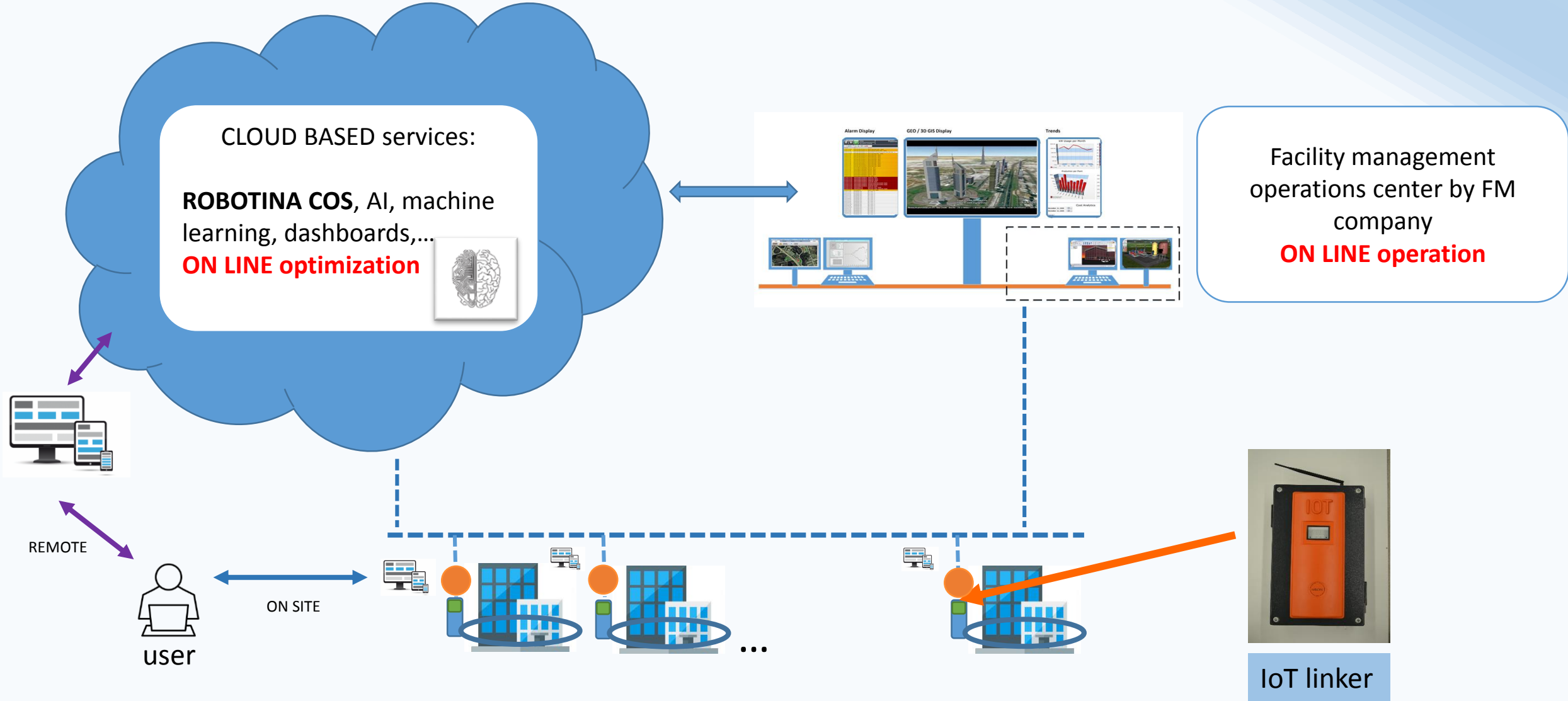


BIQ – building intelligence

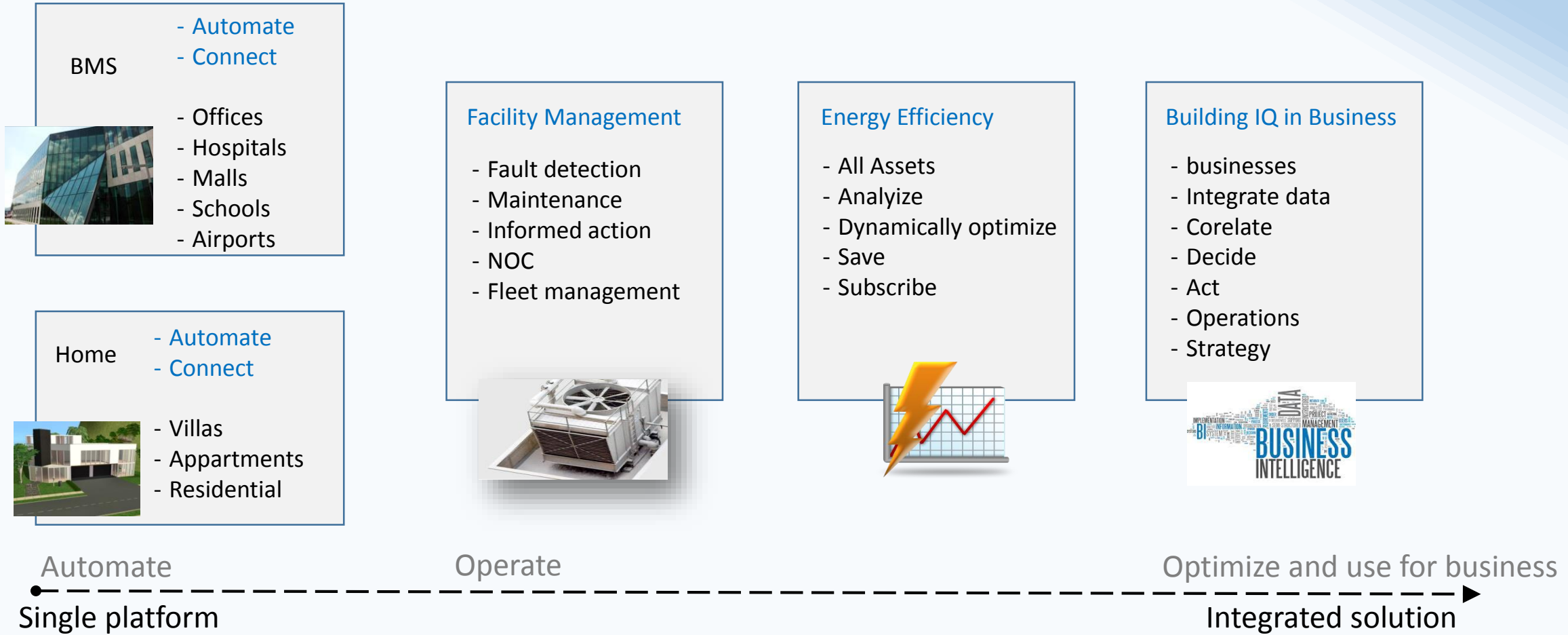
- automation in buildings, malls, airports and everywhere efficiency matters
- operation and optimization in real time from everywhere



Building Management and optimization



From Automation to BIQ – sustainable building intelligence



FROM AUTOMATION TO BI - COMPLETE SOLUTION FROM MANUFACTURER

Layers of BMS

To BIQ level



SCADA - OPERATIONS

Operate: Build on 64 bit technology with advanced functions

- Alarming, trending, analysing
- 2D / 3D graphics for live view– gives a fantastic user experience
- Open connectivity and easy integration with other systems

IOT linker

Connect various systems and unify the data structure: connect everything

- Connect intelligent equipment (chillers, HVAC, security, fire, access...)
- Other SCADA systems with controller structure
- Any standard protocol

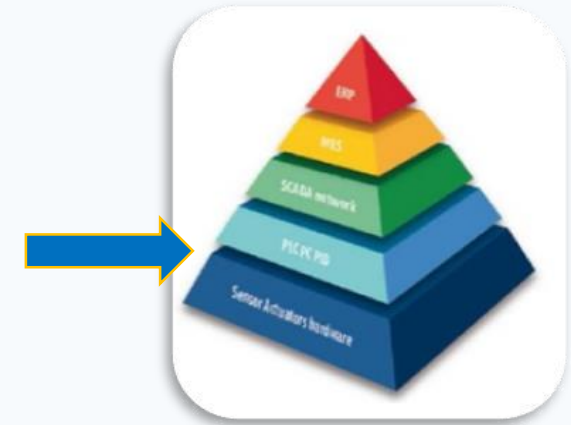
BMS Controllers

Automate and control: Unique distributed structure

- PLC / controller network on Ethernet backbone
- Different interfaces for 3d party systems
- OPC connectivity, any type of I/O



Building Management System



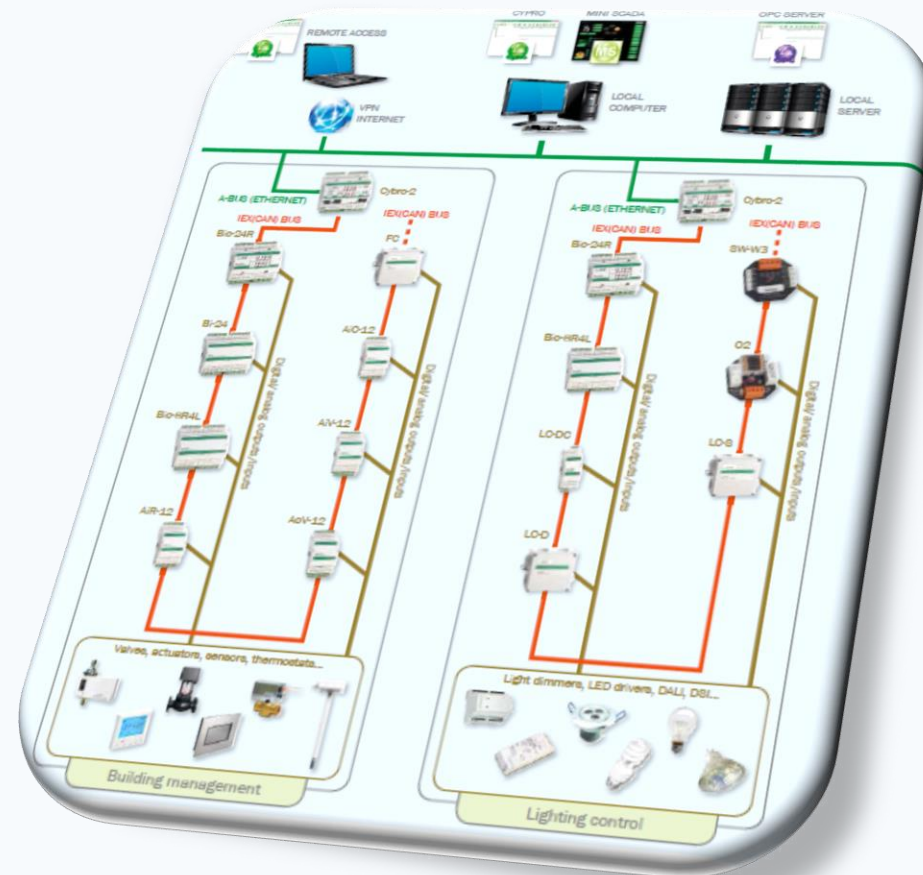
Distributed Architecture

Easy Config & Flexible

Scalable

Device oriented

Programmable



Efficient Installation



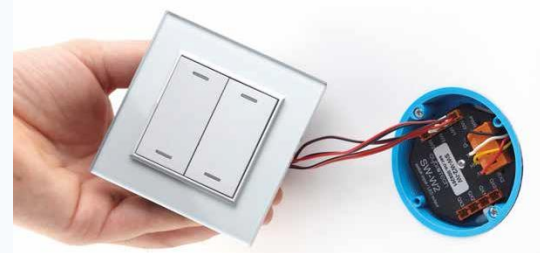
Large modules
variety

Field mount

Cabinet
mount

Wall mount

Embedded
inside
devices



Main Controller



Fully programable
EN 61131-3

Wide connectivity

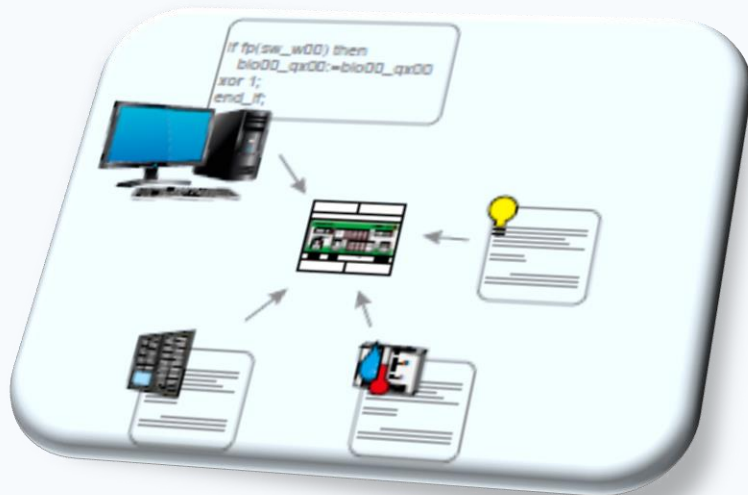
- Ethernet
- Serial (RS232,485)
- WiFi

Industrial grade

- 230V AC or 24V DC supply voltages
- 35mm DIN rail mounted
- Opto isolated inputs
- Communication and status LEDs

Performance

- Advanced ARM CPU, large user memory, multiprocessor structure
- Ethernet and 2 x RS232 open protocol ports
- CAN communication with expansion units
- 10MHz high speed counter
- Fully vertical integration from devices to cloud

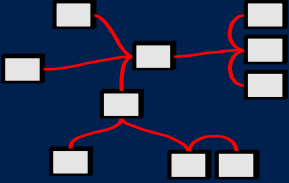


Connectivity

Open connectivity

- INTERNET / ETHERNET
- GSM/PRS
- MQTT
- OPC, ...

Free Network topology



Open protocol

- Varius protocol supported
- Special COM modules



High level Connectivity

Controller level network

Operator layer

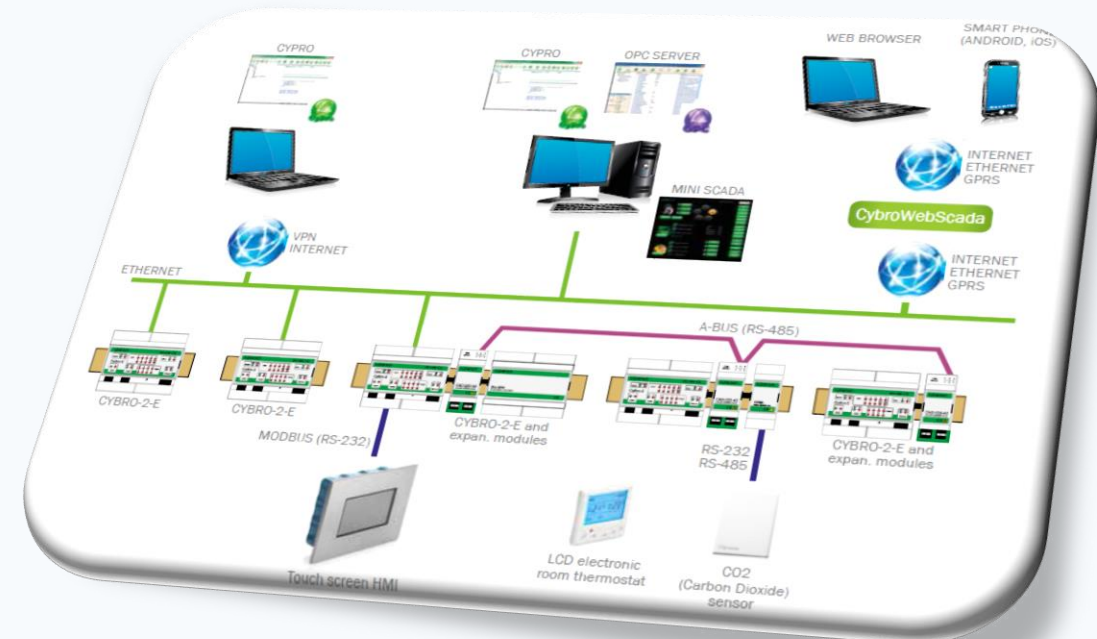
- Graphical user interface
- Local, mobile and remote access
- Data logging

System integration layer

- Based on TCP/IP
- OPC Server
- Remote programming & maintenance

Network of decentralized controllers

Connection to other automation systems



Interface to everything



<p>HVAC</p> <ul style="list-style-type: none"> HVAC FCU VAV Chillers Room Control 	<p>Light control</p> <ul style="list-style-type: none"> ON/OFF DALI DSI Analog 	<p>DG, UPS, PUMPS..</p> <p>Monitor of crucial systems</p>	<p>Access control, CCTV</p> <ul style="list-style-type: none"> ID, tags, RFID Soft key Time & space
<p>People counting, occupancy, density, foot fall</p>	<p>Car Park Management and guidance</p>	<p>System integration</p> <ul style="list-style-type: none"> Integration of all different systems in buildings Security & Safety CCTV Fire detection and prevention Auxiliary systems 	<p>PV plants, energy systems, transformer stations</p>

Integration of ALL systems for Synergic results!



Intelligent I/O Network

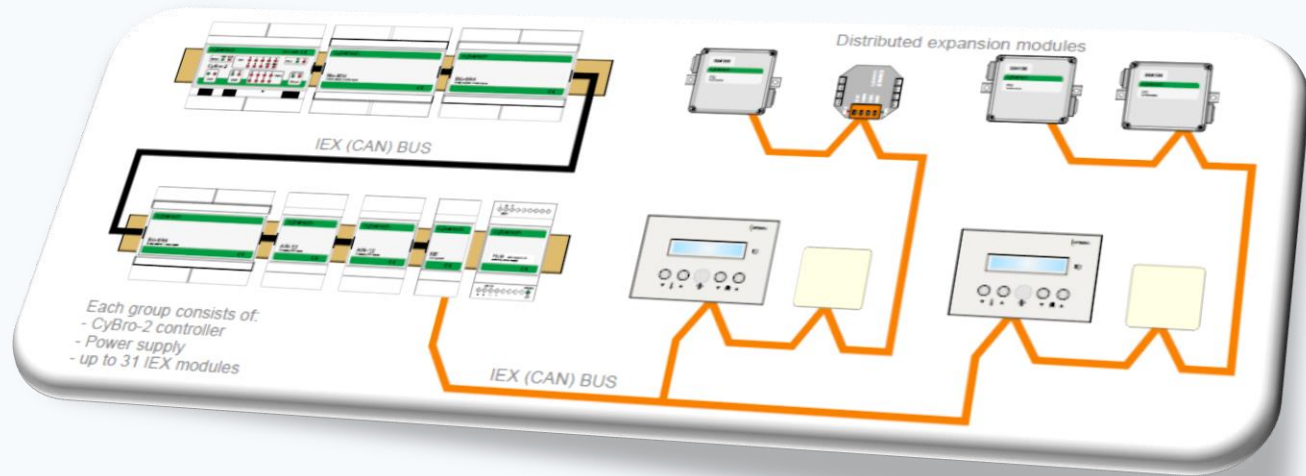
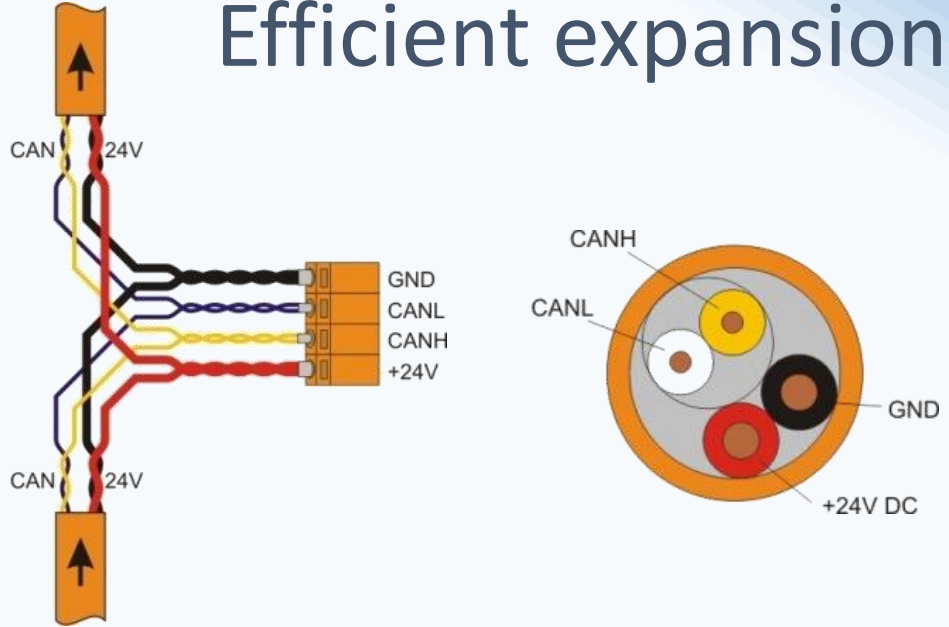
CAN bus for fast and reliable communication

Up to 31 expansion modules in free bus technology

No DIP switches, all modules are autodetected

Adding modules without effecting existing system

Efficient expansion – single cable





Hardware Range



Functionality

- Digital and analog I/O
- Temperature, humidity, illumination
- DALI, DSI, IR comm.
- Serial comm modules




New modules on request

- Small quantities
- Low costs, efficient design
- Fully customizable

FULL RANGE OF EXPANSION MODULES – CONNECT ANY I/O OR DEVICE










Developer tools

-  **CyPro**
integrated development environment, editor, compiler and on-line monitor
-  **IEX Loader**
download firmware to IEX modules, primary for IEX module developers
-  **Modbus Tester**
MODBUS-TCP simulator and traffic logger

Communication

-  **COM Server**
simple command line interface
-  **HTTP Server**
smartphone to CyBro interface
-  **OPC Server**
high-performance industrial interface
-  **Relay**
access controllers on Internet, as they are connected locally

Accessories

-  **Access**
key configurator for time-and-space management solutions
-  **Scheduler**
execute given task at predefined time
-  **Backup**
one-touch backup for multiple controllers
-  **Data Tool**
read/write variables from multiple controllers
-  **Kiss Logger**
simple data logger, data is saved in text file
-  **Bin Loader**
set CyBro static IP, NAD alias and Modbus ID, update kernel and plc program
-  **IEX Manager**
module NAD change, firmware update, CAN bus quality monitor

Visualization

-  **Mini Scada**
simple human-machine interface
 -  **Web View**
simple human-machine interface, written in PHP
 -  **Web Scada**
visualization system and data logger, based on Apache/MySQL/Python
 -  **CyBro Droid**
visualization app for Android phones and tablets
 -  **iCyBro**
visualization app for iPhone & iPad
-  **MyOffice**
software gadget for office and home

Software Tools



Time saving for
Developers,
System integrators
and Instalers

Graphical
interfaces,
schedulers and
logging tools for
end users

From controller to
cloud and back

POWERFULL TOOLS FOR SYSTEM INTEGRATORS



SCADA & NOC – operating buildings



DAILY OPERATION, MAINTENANCE, ANALYTICS, DASHBOARDS



Operator's Front end – SCADA layer

Visualisation

3D and 2D Graphics

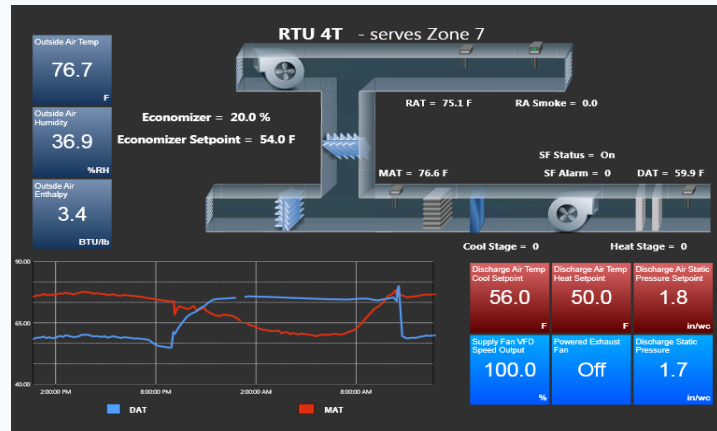
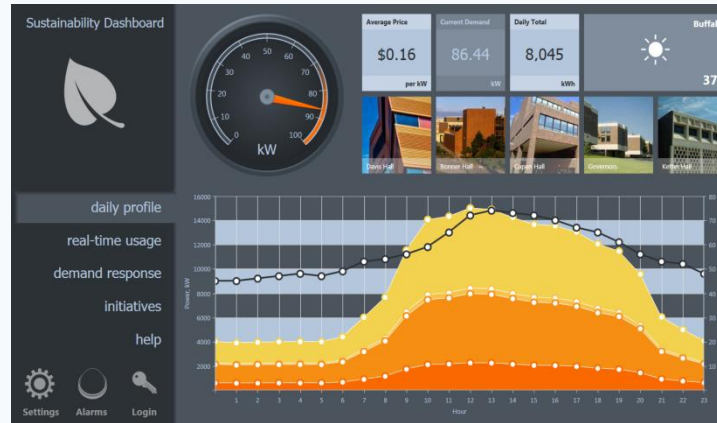
3D and 2D import

Animate Anything

Command and Control

Picture in a Picture

Publish to any Device



VIEW, ANALYZE AND ACT – INFORMATION BASED ACTION FOR EFFICIENT OPERATION



Alarms & Trends

Alarms

Unlimited Alarm views

Filter and Sort on any Criteria

Alerts, Emails, SMS, Skype

Operator Annotations

Graphical Analysis

Real-Time and Historical

Trends

Real-time & Historical Tags

Customizable Viewer

Various Chart Types

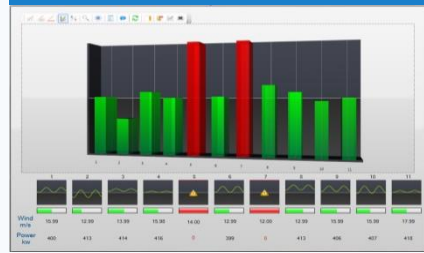
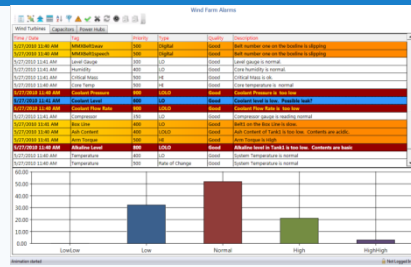
Stacked or Tabbed Charts

Runtime Toolbar

GraphWorX Embedding



Time	Tag	Priority	Type	Quality	Description
1/10/2012 12:01 PM	Temperature	High	OK	Good	Temperature above threshold
1/10/2012 12:01 PM	Pressure	Low	OK	Good	Pressure below threshold
1/10/2012 12:01 PM	Flow	High	OK	Good	Flow rate above threshold
1/10/2012 12:01 PM	Level	Low	OK	Good	Level below threshold
1/10/2012 12:01 PM	Speed	High	OK	Good	Speed above threshold
1/10/2012 12:01 PM	Position	Low	OK	Good	Position below threshold



CONTROLLED ALARMS
LIFECYCLE AND USEFUL TRENDS
FOR ACTION



Everything for efficient operation

Scheduler

Outlook-style Configuration

Holiday, Seasonal and Override Support

Automatic Command Execution

All Day & Timed Events

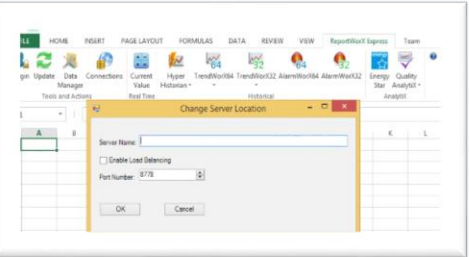
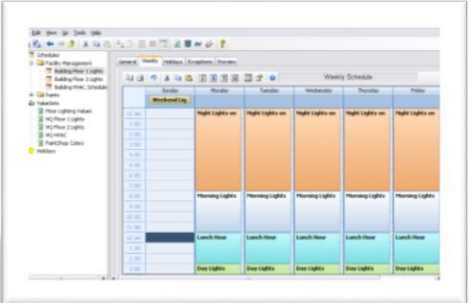
Reporting

Excel-based Reporting

Parameterized Reports

Excel Task Pane Integration

Simple & Easy to Use



AUTOMATIZED AND CUSTOMIZED REPORTS FOR EFFICIENT MANAGEMENT



Command center

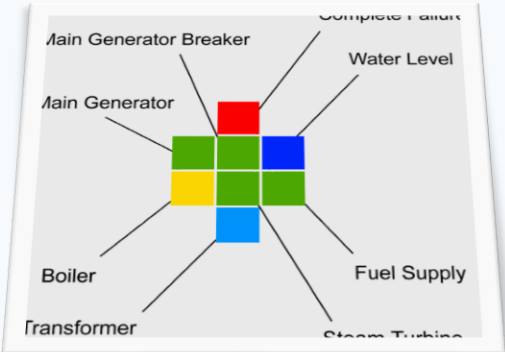
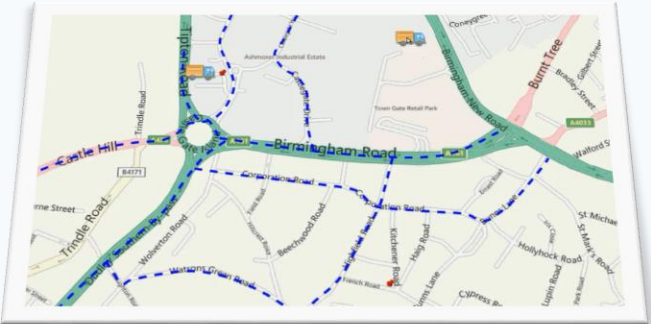
Integrated operations

Integration with maps – geographical correlation

Visual Feedback for Problem Identification

Information System Integration

NOC level integration, 24/7 operations, single point asset management, maintenance team management



OPERATE MORE BUILDINGS FROM ONE CENTER – OPERATION AND FACILITY MANAGEMENT

BIQ – building intelligence



REDUCE TOTAL COST OF OWNERSHIP COST AND IMPROVE BUSINESS RESULTS



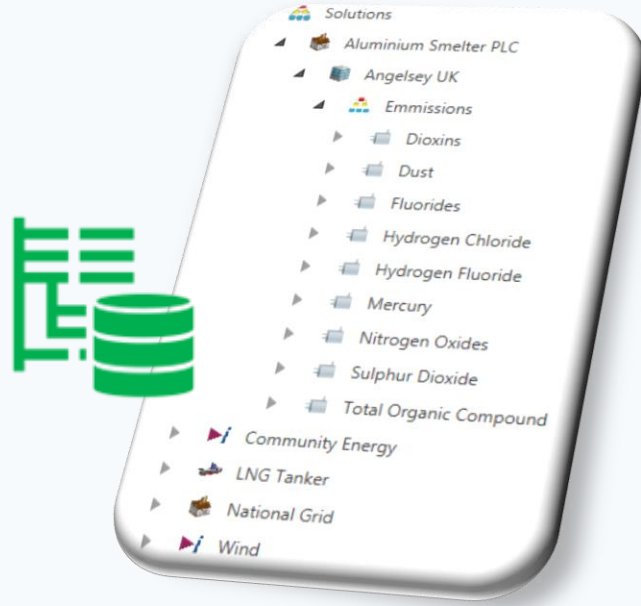
Asset's

Massive Scalable Systems

ISA95 Hierarchy

Normalize, Cache & Poll

Linked O&M documentation and support



Fault detection & prediction

Predict, reduce and eliminate equipment downtime

Automate fault detection and deliver real-time notifications

Reduce maintenance and determine probable causes

Improve reliability and control



UP TO 30% SAVINGS THROUGH FDD, RULES AND MACHINE LEARNING



FD saves money

Fault Detection and Diagnostics (FDD) Engine

When equipment failures occur, **real-time** advanced hardware and software technology provides automatic guidance to a list of causes sorted by probability, resulting in reduced downtime and lower costs to diagnose and repair



IMPROVE



DIAGNOSE

Powerful rules, Diagnostic Engine

DETECT



Online & offline help, O&M Logs, Wiring diagrams, Manuals, Guides, Parameter lists and phone numbers for support just with a mouse click on an asset.



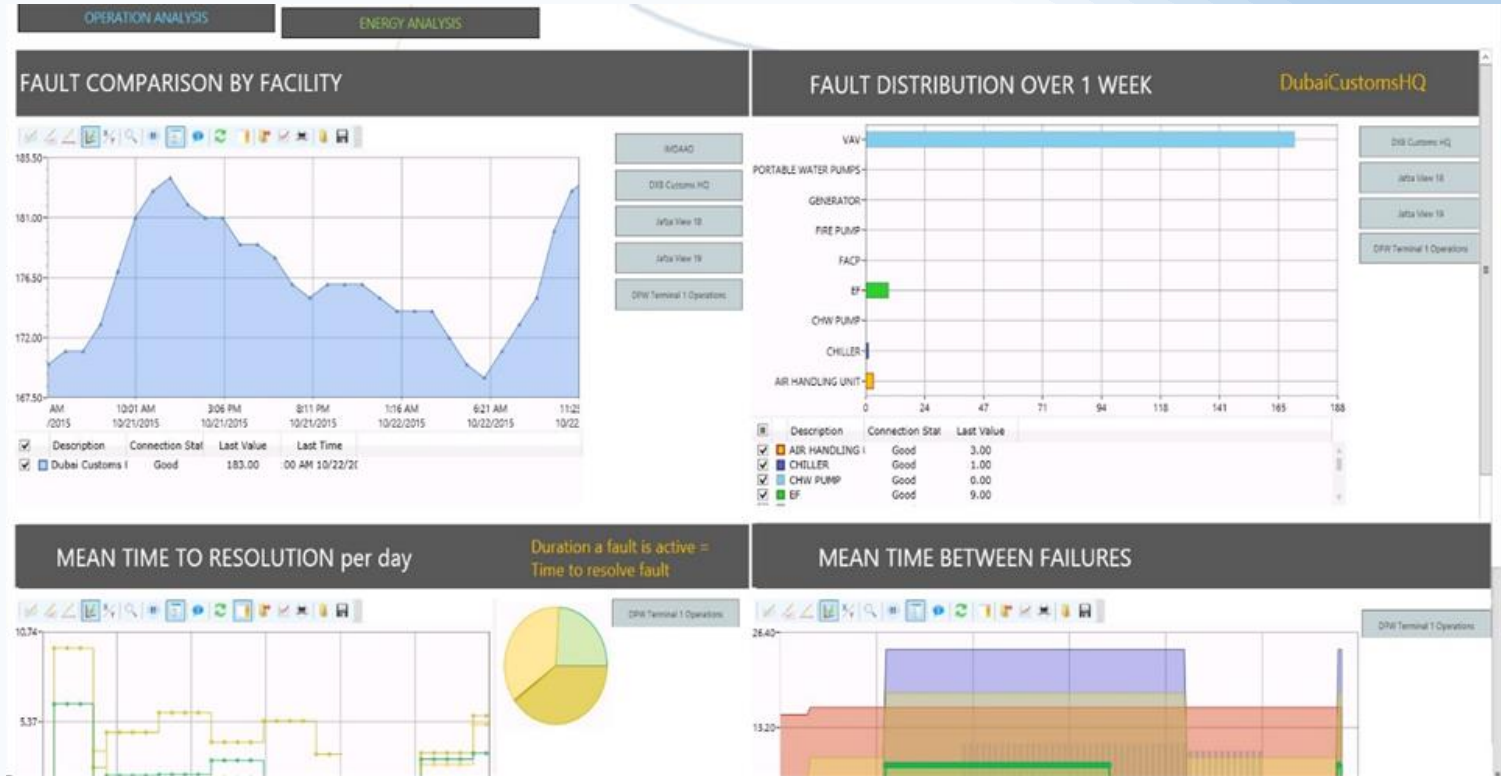
Fault detection and support to (re)action

Fault Detection & Diagnostics

Logic for Predicting Faults

Knowledge Capture & Ranked Causes

Linked O&M documentation and support



People Counting

Highly Accurate & Consistent

Web Based & fully Automated

Real-time & Historical ; Favorites

Wide range of Reports / Alerts comparisons

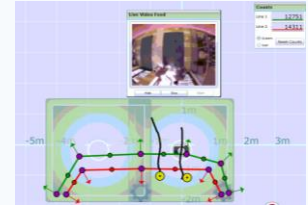
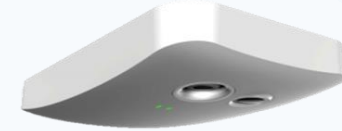
Emergency Guidance

Latest tech. sensors with data back up

Easy installation & maintenance

Customizable Reports

Informed action



Tracking & Tracing

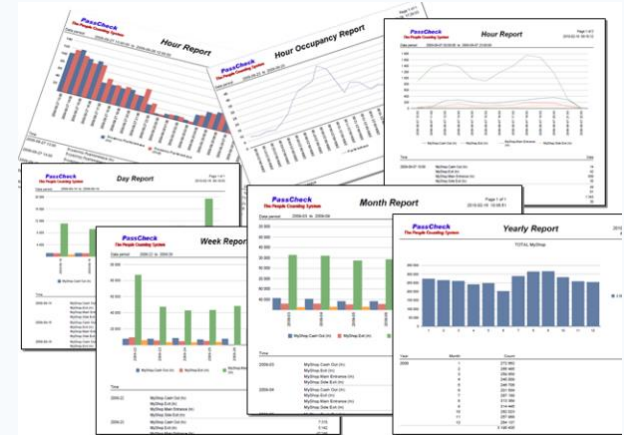
Individual visitor tracking

Identify Frequency of visits

Staff Tracking Heat Maps

WiFi Ads and marketing

Footfall & occupancy for corelated analysis



ParkIQ-integrated part of BIQ

PLC Based system	Web Based & fully Automated	Real-time & Historical Alarms	Real GUIDANCE
RGB LED sensors Reserved space	Automatic configuration	VMS (vehicle messaging)	Automatic Number Plate Recognition

Car Park Management

Payment kiosks	Entry / Exit Terminals	Revenue management	Variety of barriers
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Satisfied customers + data + management = better business

Car Park Solutions



Energy Efficiency




DubaiCustomsHQ

Area 200000 Sq. Ft	BUILDING TYPE Office	CONSUMPTION 9535654 kWh	TOTAL FAULTS 169.00 View Faults	View Trend	CHILLER STATUS  CHILLER 1 RUNNING CHILLER 2 RUNNING CHILLER 3 RUNNING CHILLER 4 OFF
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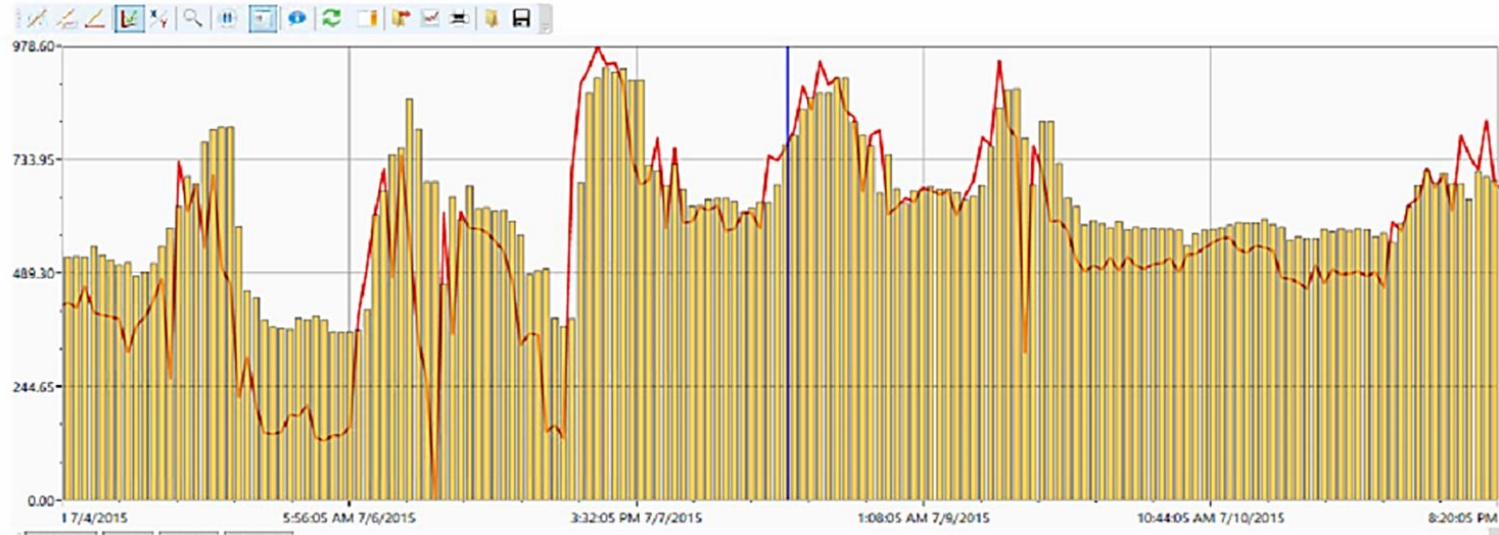
Variable Air Volume	143
Portable Pump Set	0
Air Handling Unit	16
Exhaust Fan	9
CHW Pumps	0

[VIEW ALL EQUIPMENTS](#)

 [WORK ORDER SYSTEM](#)

 [BUILDING EM](#)

 [LOAD BUILDINGS LIST](#)



Description	Last Value	Last Time
<input checked="" type="checkbox"/> DXB CUSTOMS HOURLY ENERGY	689.00	8:00:00 PM 7/11/2015
<input checked="" type="checkbox"/> TOTAL POWER USAGE	207,642.81	8:00:00 PM 7/11/2015
<input checked="" type="checkbox"/> OUTSIDE TEMPERATURE		

MAIN DISTRIBUTION BOARD 1	MAIN DISTRIBUTION BOARD 2
---------------------------	---------------------------



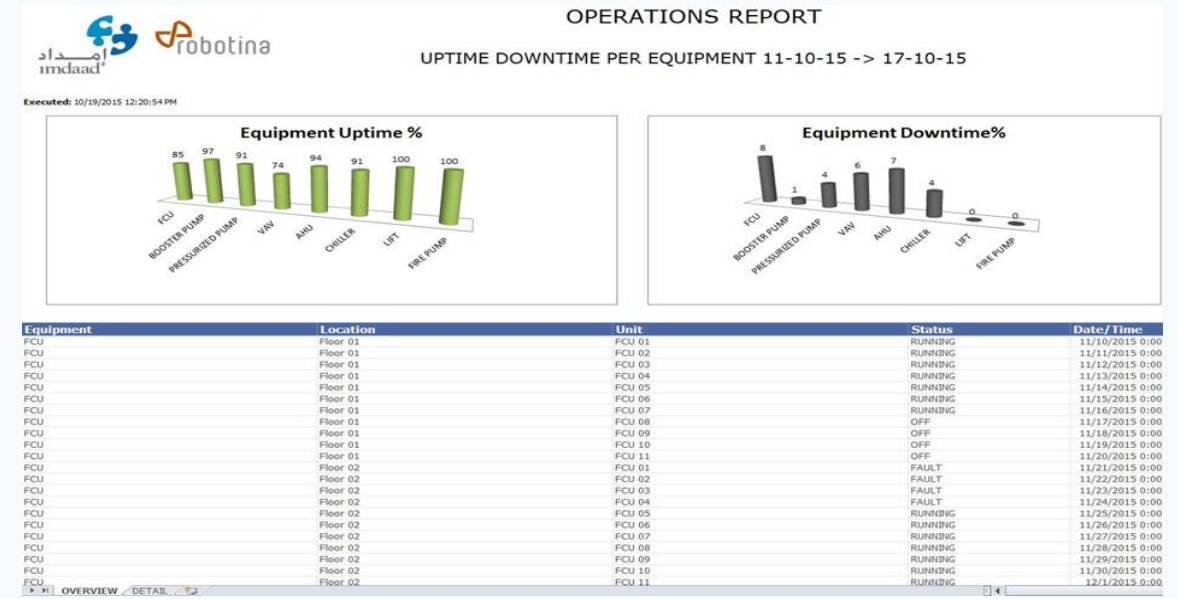
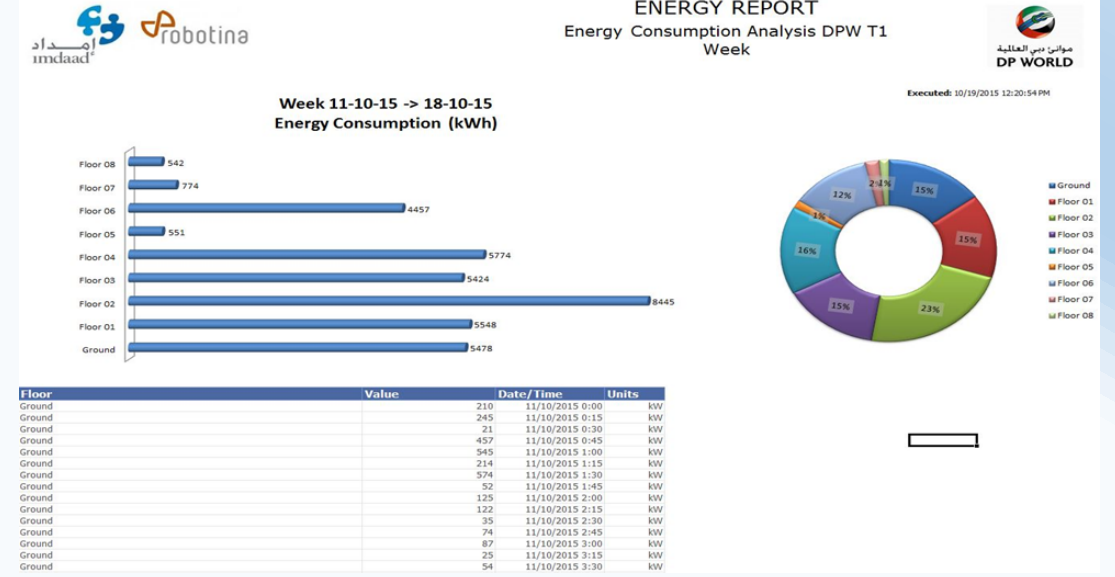
Understanding & optimizing energy flows

Precise Energy Distribution & Consumption

- Save on energy expenses
- Estimate upcoming energy bills
- Breakdown cost per location/system

Improve Environmental Behaviour

- Decrease energy waste
- Reduce carbon footprint
- Support corporate social responsibility



BMS – building intelligence

KEY BENEFITS

- Reliable, flexible, industrial grade unified automation hardware platform
- Modern, High performance SCADA for local and remote operational management
- Cognitive Optimization (COS) for best performance and lowest cost

RELATED SOLUTIONS FROM ROBOTINA:

- HIQ – Home
- NOC – advanced operational centre
- COS – Cognitive Optimization System

WE DEVELOP & PRODUCE HARDWARE, SOFTWARE AND PROVIDE SAAS





BMS

- automation
- operation
- optimization

HOME, BUSINESS, HOSPITALITY, AMBIENT ASSISTED, PUBLIC...

