



Your Independent Global **SCADA** Provider



*Taipei 101, one of the highest building in the world, chose PcVue Solutions*

FRANCE / CHILE / CHINA / GERMANY / ITALY / JAPAN / MALAYSIA / SINGAPORE / SWITZERLAND / UK / USA

## HMI SCADA

# Building Management System

INDUSTRIAL FACILITIES, DATA CENTERS, OFFICE BUILDINGS,  
UNIVERSITIES, TRANSPORTATION INFRASTRUCTURES,  
HOSPITALS, MALLS

[www.pcvuesolutions.com](http://www.pcvuesolutions.com)



ARC Informatique has been developing and marketing industrial software for over 30 years.

ARC Informatique is the PcVue Solutions SCADA developer, offering software, hardware and application support as a global service to several markets. The company has over 20 years' experience in building management system.

The open, scalable, software platform of PcVue Solutions delivers full control and connectivity, implementing a large variety of built-in drivers including IEC 61850 DNV KEMA certified, BACnet BTL certified, LON, KNX, OPC and a rich graphical interface, an alarms and events logging system and reporting capabilities.

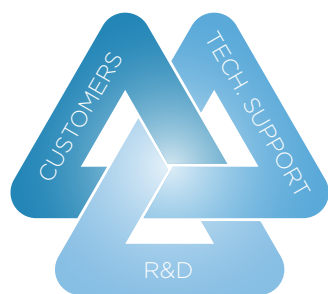
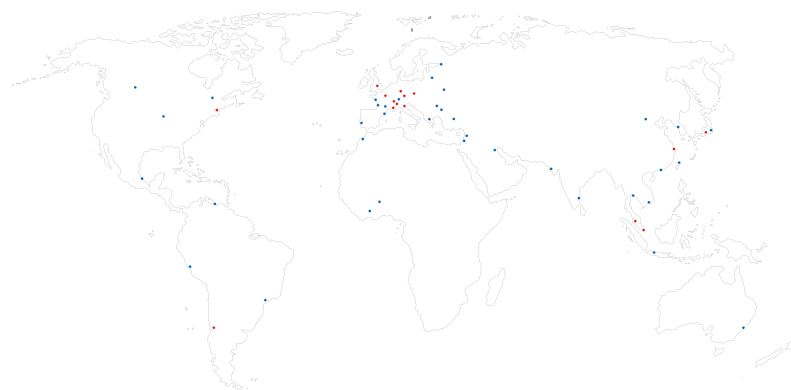
Hundreds of sites are monitored and controlled by PcVue Solutions including several skyscrapers in La Défense business district, the AIRBUS A380 assembling site in Toulouse, Charles de Gaulles Airport terminals and the 4<sup>th</sup> highest building in the world, TAIPEI 101, in Taiwan.

Both ISO 9001 and ISO 14001 certified, the company maintains an international presence through direct sales offices in the US, Europe, Asia and Latin America and relies on its partner network to guarantee exceptional service, domain expertise and product satisfaction. PcVue Solutions, your independent global SCADA provider.

## PcVue Solutions, your independent global SCADA provider

A global player with a local approach

- 15 strategic bases
- 50+ VAR worldwide
- 200+ local SI partners



### A customer-oriented approach

Listen to and answer our customers  
Develop and adapt our solutions via R&D  
Responsive technical support

### Continuous quality improvement

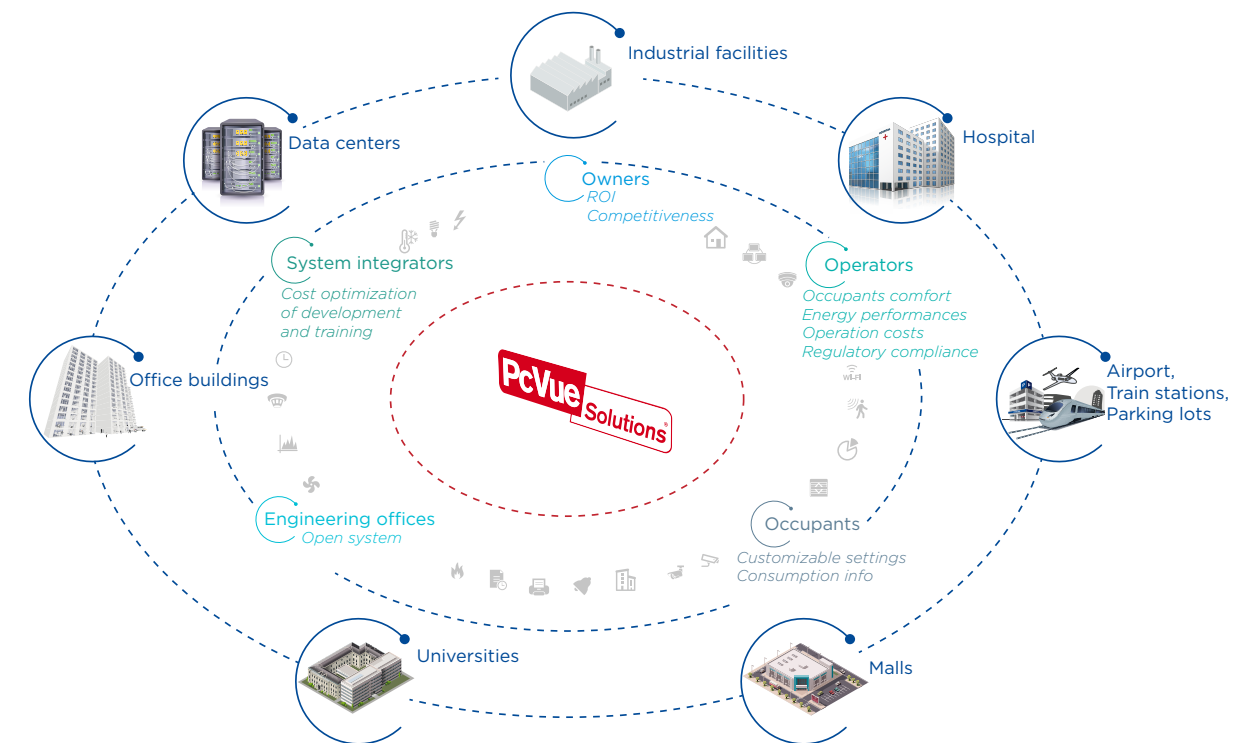
- ISO 9001 & ISO 14001 certified
- Microsoft certified partner
- OPC foundation member
- Member of the BACnet™ Interest Group
- BACnet™ BTL B-AWS Listed
- LonMark® International Partner



“ To answer the need of performance, maintenance, energy saving and optimization in BMS, PcVue Solutions converge stakeholders' objectives using a common monitoring system. ”

### Benefits

- ✓ Manage one or several buildings in a centralized and cohesive manner
- ✓ Ensure occupants' comfort and safety in all circumstances
- ✓ Guarantee proper functioning and durability through efficient maintenance
- ✓ Optimize the return on investment while ensuring regulatory compliance
- ✓ Run an open and scalable system that adapts to changes at lower cost
- ✓ Connect all BMS components (Technical Management, Billing, CMMS, Occupancy...)



“ The ability to analyze archived data and real-time events can help maintain user comfort and improve performance. ”

### Features

- ✓ Monitoring solutions for all technical aspects of the building
- ✓ Intuitive graphical interface for monitoring and control of facilities, locally or remotely
- ✓ Monitoring and analysis of real-time performance
- ✓ Native support for standard protocols BACnet™, LonWorks™, KNX, Modbus®, SNMP, OPC...
- ✓ Optimized management of alarms and events
- ✓ Data archiving locally or in the cloud in DSaaS mode
- ✓ Advanced data analysis & Reports
- ✓ Single development platform featuring an intuitive configuration environment
- ✓ Assured interoperability with all building management services



## Why PcVue is worth a look?

PcVue Solutions at the center of the Smart Building and SmartCities opportunities

To avoid the proliferation of systems and applications that meet the needs of performance, savings, energy optimization and building maintenance, PcVue Solutions converge the objectives of stakeholders through a common system of centralized supervision.

*The design of a Smart Building Ready application, allow users to be involved in reducing the environmental impact*

through the quality of information transmitted automatically via Smart mobile applications.

To address the critical issues of the coming years, the historical data analysis capability and real-time events of

*PcVue Solutions will help contribute to the maintenance of user comfort and improved performance while ensuring compliance costs and regulatory compliance.*

By its ability to interface with heterogeneous systems, PcVue Solutions ensures interoperability between disparate technical aspects with one simple application, easy to implement and maintain through its modeling tools.

## PcVue Solutions innovates to connect humans, communicating systems and IIOT

The constant and rapid changing of technology continuously brings new ways that complement current methods and change the practices used for monitoring installations.

The advent of mobile applications such as proactive transmission of information depending on users, dynamic and contextual information display (and the disappearance of static navigation menus) are some examples.

*In an increasingly communicating universe, PcVue Solutions innovates with solutions that facilitate exchanges between people, connected objects and the SCADA system by taking advantage of the latest mobile and geolocation technologies (NFC, Beacons, QRcodes, GPS).*

A worker can therefore be informed in real time, depending on his position and level of responsibility, of actions he may realize from his smartphone. At the same time, to ensure safety, the control room is able to know the position (inside or outside) of the workers.



*PcVue Solutions Mobile app automatically adjusts the display of information depending on the identity of the user and its position*

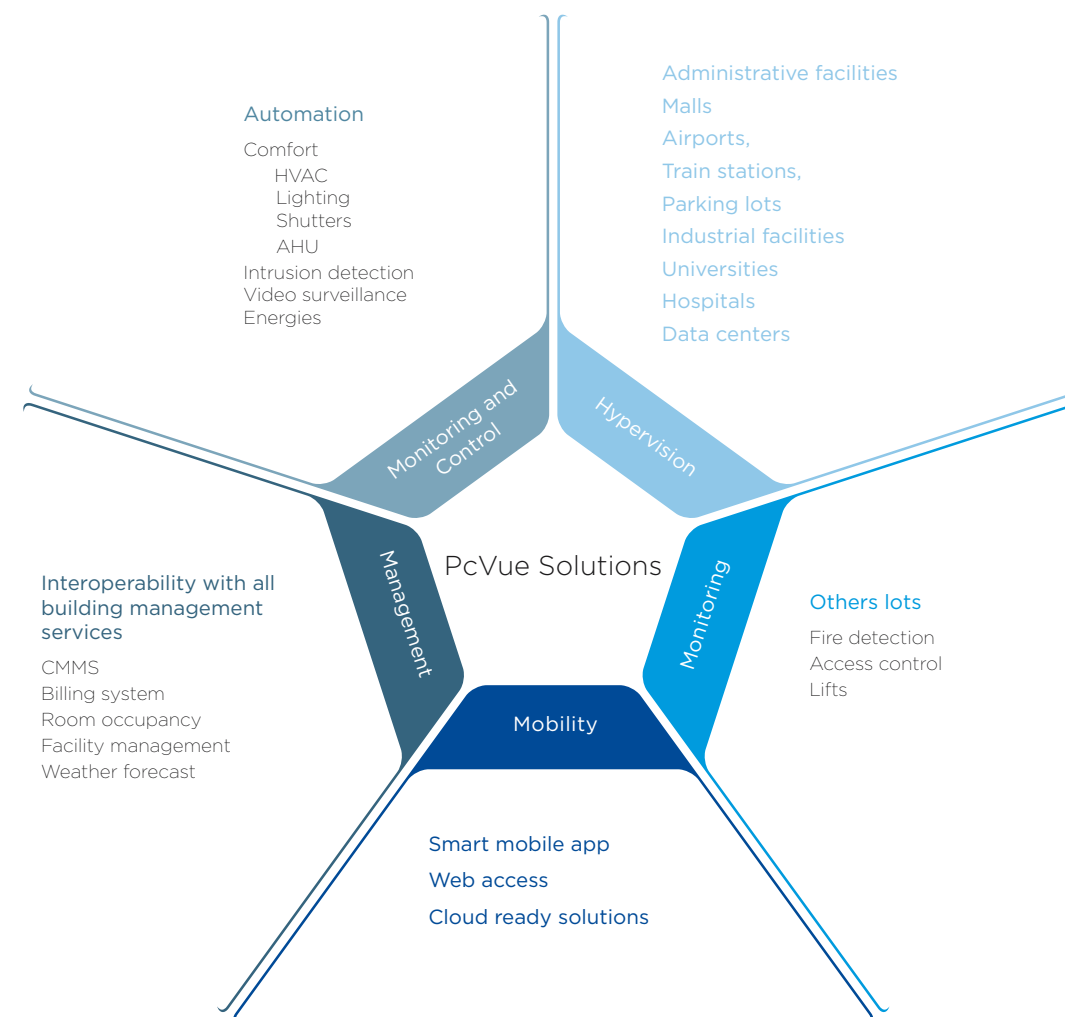
“ PcVue Solutions makes available its 20 year-expertise in Building Management System enabling partners to develop new applications and support the migration of older systems by taking advantage of the latest technological innovations. ”

Fabien RIGAUD

Head of Marketing & Communication

## Smart Building Ready

A common system for centralized management of buildings





# Ensure the comfort of occupants with an efficient and effective operation

Monitoring and control facilities anywhere, at any time



## DISPLAY & CONTROL

- ✓ Customizable modern and intuitive graphical interface
- ✓ Display asset status in real time
- ✓ Supervisory and control the equipments
- ✓ Management of comfort settings based on time slots defined through a web interface
- ✓ Remote control from smartphone or tablet
- ✓ Display and control of video surveillance systems

# Ensuring system availability and operational maintenance while controlling operating costs

Preventive and operational maintenance of installations

## ALARMS & EVENTS MANAGEMENT

- ✓ Advanced visualization of real-time alarms
- ✓ Alarm notification via sms, smart mobile application, emails
- ✓ Lists of historical time-stamped events
- ✓ On-call module for effective incident management



## ADVANCED FEATURES FOR DATA DISPLAY

- ✓ Data display by zone, equipment, use ...
- ✓ Real time and historical data trends
- ✓ Comparative trends
- ✓ Threshold display
- ✓ Data trend export to Excel



## MONITORING AND ANALYSIS OF ENERGY PERFORMANCE

- ✓ Customizable Dashboard
- ✓ KPI - Key Performance Indicators
- ✓ Consumption balance sheets by period
- ✓ Archiving data in a local database or in the cloud in DSaaS mode (Amazon, Microsoft Azure,...)

# Optimize the return on investment while ensuring regulatory compliance

Control of performance, operating costs, and regulatory compliance

## OPERATING DATA PROCESSING

- ✓ Editing of dynamic reports (consumption balance sheets, ...) from archived data
- ✓ Automatic distribution of reports by email
- ✓ Web Interface to generate and visualize reports on demand

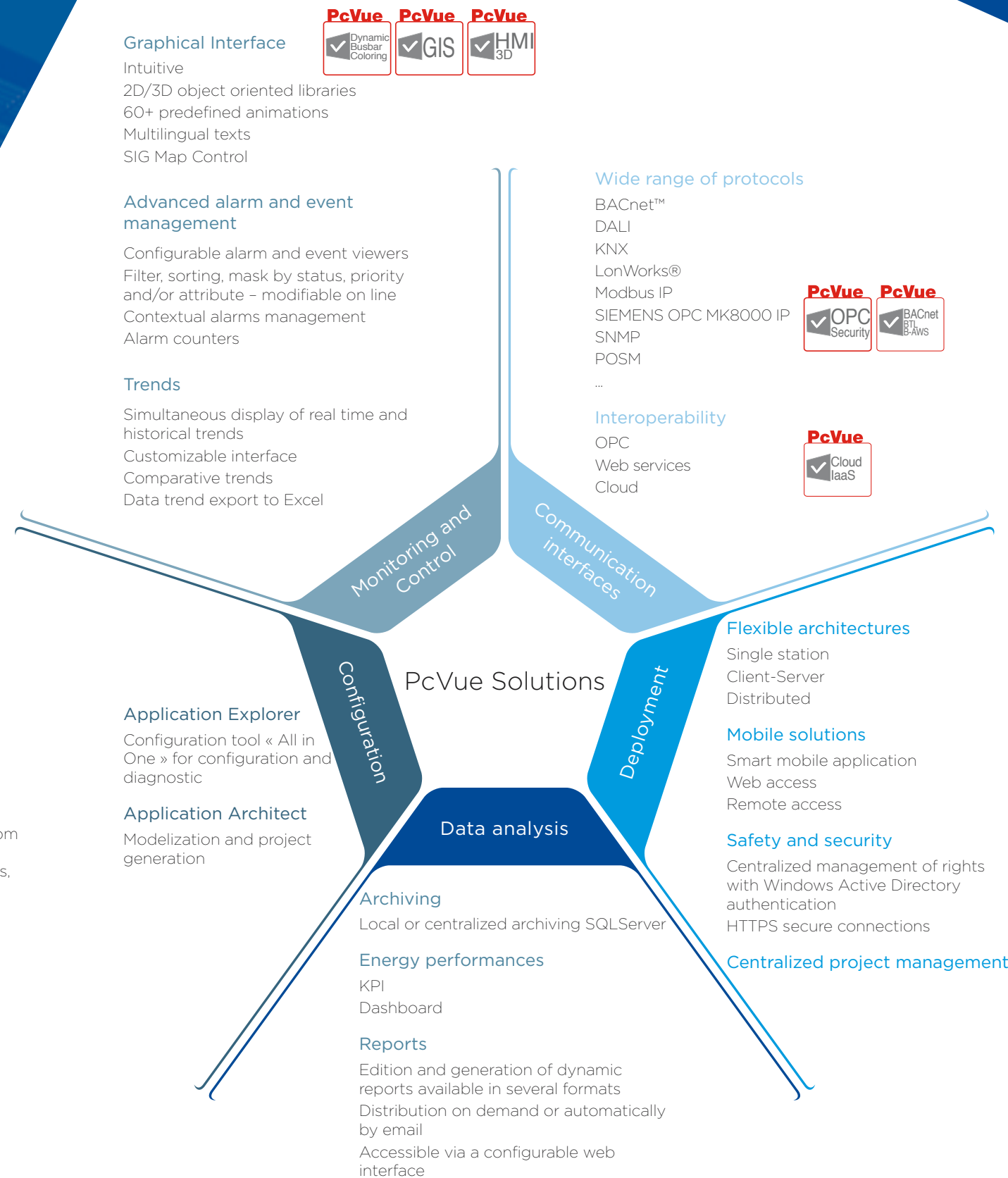


# PcVue Solutions facilitates the work of the system integrator

**Reduction of development costs** with an application platform that is easy to implement and maintain

**Flexible and scalable deployment** from simple local station to multi-sites architectures compatible with Cloud solutions in SaaS mode

**Interoperability** from the data field to the building management services (billing, CMMS, booking space, facilities management ...)







“ We chose PcVue for two main reasons. The first is to provide our customer, TelecitGroup, an open, multi-protocol and scalable system up with the market standards and independent of BMS constructor and PLCs. The second reason is that with PcVue there are only two protocol conversion points: Direct LON or MODBUS communication gateways collect information, and then the PLCs are directly accessible on the IP network. This simple hierarchical architecture is much more reliable and faster in processing than other solutions in the market that can have up to four conversion layers before reaching an SQL type database. ”

Hélène GAURY

Bouygues Energies & Services

## Success Story

# PcVue Solutions at the heart of TelecitGroup France datacenter

## Supervision of a datacenter

### The company

*TelecitGroup is the European leader in independent data center operators.*

The company, headquartered in London, designs, develops and manages secure and highly connected environments, enabling the accommodation of technical infrastructure (web and IT) safely. TelecitGroup manages 24 data centers located in the main European business centers.

### The projet

*The system integrator Bouygues Energy & Services selected PcVue Solutions to monitor power distribution and cooling infrastructures of all the facilities of the new TelecitGroup data center in Paris.*

The communication architecture (open and without

many hierarchical layers) were determining factors in this choice. PcVue generates, amongst others, power consumption reports of the servers operated by TelecitGroup Vision customers.

Its new building named Condorcet, with a customer area of 3400 m2, ideally meets the needs of businesses looking to locate their critical infrastructure in a data center. The building notably received the trophy for «Europe's Best Data Center" at Data Center Europe 2010. The new site was designed in conformity with international standards ISO27001: 2005 for information security, and ISO 14001: 2004 which ensures effective environmental management system.

Energy efficient design principles have been used to construct the building, as well as air conditioning technologies using free cooling and intelligent and sophisticated systems to reduce energy consumption.

L'immeuble comporte un centre de supervision, un In addition, the multiple connectivity options available on site are enhanced by connectivity to PANAP and SFINX,

## BUSINESS CHALLENGES

- ✓ Centralized monitoring and control of the electrical distribution and cooling infrastructures
- ✓ Easily interface systems and various types of equipment

which offers customers quality options of national and international peageage and Internet connectivity.

The building includes a monitoring center, a NOC (Network Operations Center), which holds an Image Wall featuring 12 screens (52 inches), each dedicated to different systems: 6 screens for security and video-surveillance, 1 screen for fire detection, 3 screens for operating installations applications, and two PcVue workstations. The first station is dedicated to electrical distribution infrastructure, the second supervises air conditioning. Each station has three screens: one screen with mimics (air conditioning and electrical supply) on the Image Wall and two other screens on the operator stations. A screen for the display of installations in detail, and another remote screen with a general mimic for PC Security supervision.

In terms of electrical distribution, PcVue supervises the whole installation, from transformer stations, to inverters, distribution boards and electric meters at each of the server cabinets.

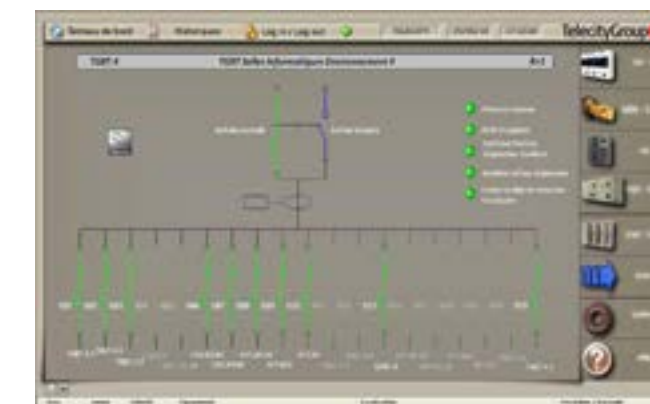


## SUCCESS KEYS

- ✓ Multi-protocol, open and scalable system
- ✓ Reliability of the system
- ✓ Ability of providing comprehensive reports dynamically

For air conditioning, PcVue integrates the monitoring for the entire chain from the chillers, the pumps and the roof top units, to the air conditioning cabinets in the accommodation rooms.

The Dream Report software, an integral part of the PcVue Solutions offer, allows TelecitGroup to provide comprehensive reports of facilities, particularly for the power consumption of each customer.



## Telecity Group

### Success Story



#### MAIN TECHNICAL FEATURES

- ✓ Data center surface area: 3 400 m<sup>2</sup>
- ✓ Site conforms to ISO 27001: 2005 for information safety and ISO14001: 2004 for environmental management
- ✓ 2 PcVue stations
- ✓ Visualization on an image wall comprising 12 screens

#### RESULTS

- ✓ A single centralized system for the supervision of the data center infrastructure
- ✓ Reduction of development costs thanks to an easily scalable system
- ✓ The ability to know the electrical consumption of each client with comprehensive and dynamic reports

## References

# Some snapshots of a few of our international references

### Cœur Défense / Courbevoie - France

#### Revamping the BMS of Coeur Defense

##### DESCRIPTION

Coeur Défense office complex is located in the business district of La Défense. With 160,000 m<sup>2</sup> of offices in five HRB listed buildings (high-rise building) including 2 buildings of 40 floors superstructure (160m high) and three 9-story buildings (41m high)

- 75 air handling units
- 8,000 fan coil units
- 59 elevators and 18 lifts
- 6 levels of parking infrastructure
- 2,880 parking spaces

Beyond the traditional building management features, the system was designed as a real tool for management and optimization. It supervises zones occupancy and the regulation of heating and lighting. The tailor made solution guarantees the performance of eco-construction, eco-management, and comfort of the operating structure, which ensures the operator is rewarded for the quality of its renovation.

##### TECHNICAL ENVIRONMENT

Built around a Gigabit heart network with a subset of the distribution 100Mbps switch / S  
 22 LNS databases managed by the SCADA system and locally by the 250 LNS Smart Server  
 220000 to 250000 LonWorks® variables including 113000 trends  
 11300 LON nodes spread over 126 office spaces  
 Using LON / IP gateways with the "Web server" function to create points of consulting supervision by floor using a simple browser.  
 250 000 variables  
 Using LON / IP gateways with the "Web server" function to create consultation points of supervision by floor using a simple browser.

### CERN / France - Switzerland

#### CSAM Project (Cern Safety Alarm monitoring) - Renovation of the safety alarms monitoring system

##### DESCRIPTION

This project was conducted as part of works related to the implementation of the new LHC accelerator. The entire monitoring system of the CSAM safety alarms has been renovated. The objectives of this system are:

- Ensure the future LHC safety of people and goods (about 12 billion. CHF)
- Emergency alert in case of incident
- Ensure the provision of information to external users (Web server, OPC)
- Be aware at any time of the availability and failure rate of equipment
- Provide operators with information on the safety alarms (fire, lack of O<sub>2</sub>, etc.) for the entire site to alert firefighters when necessary

This system also provides diagnostic functions on equipment that compose it, in order to prevent possible failure of the system itself (monitoring the availability of CSAM)

Built on the basis of high availability PLCs, the CSAM system must perform the monitoring of 33 security zones 24/7, for the 10 years of LHC operation

The project is conducted according to operational safety regulations (IEC 61508): High Availability System - SIL2

##### TECHNICAL ENVIRONMENT

- 66 Schneider Electric Premium PLCs providing data time stamped at the source to PcVue
- 280 000 variables
- OPC Server for Siemens PLCs over Simatic Net Protocol
- Additional protocols developed using the PcVue SDK for specific equipment
- Centralized monitoring of all zones: 2 redundant PcVue stations
- 40 PcVue client dedicated to firefighters and technical services
- Oracle Database for archiving historical data

### Financial Center TAIPEI 101 / Taipei - Taiwan

#### Energy management system of the TAIPEI 101 tower

##### DESCRIPTION

The Taipei 101 tower, which is 518 meters high, holds 3 impressive statistics: it is the 4th tallest building in the world, it contains one of the highest restaurants in the world, and it has the fastest elevator with 37 seconds between the ground floor and the 89th floor. The tower offers a total surface area of nearly 200,000 m<sup>2</sup> of office space. The PcVue BMS supervises mainly values related to the generator, the power output and interruptions and shutdowns



## Fusionopolis Phase 2A / Singapore

BMS of a building complex

### DESCRIPTION

Fusionopolis is a research and development complex located in the business park One-North. Consisting of two towers of 11 and 18 floors, it houses various research organizations, high-tech companies, government agencies, retail outlets and apartments. Fusionopolis Phase 2A is a part of the complex including a business center, research laboratories and offices with an area of 84,000 m<sup>2</sup>

### TECHNICAL ENVIRONMENT

30,000 variables ; 4 PcVue servers ; 4 PcVue clients ; BACnet and Modbus TCP/IP communication

## Banco de Portugal / Lisbon - Portugal

BMS of the emergency building

### DESCRIPTION

To anticipate disasters such as earthquake, fire or terrorist attack, the bank has an alternative emergency building consuming a minimum of energy: The "Disaster Recovery Center ", 5-story building, equipped with all the necessary infrastructure to operate under normal conditions (lighting, air conditioning, water production, backup power, ...)

The three basic functions of the BMS are:

- Supervision and building control: power distribution, HVAC, lighting circuits, energy consumption analysis, emergency generator groups
- Real-time and deferred reports on energy consumption parameters and CVC
- Remote access and interconnection between the different buildings

### TECHNICAL ENVIRONMENT

PcVue SCADA station, Internet access via WebVue, 5 Saia Burgess PLCs - on Ethernet network, 2 inverters connected with Jbus

## AIRBUS / Toulouse - France

BMS of the buildings used for the Airbus A380 assembly line

### DESCRIPTION

The site mainly contains the static test building and the final assembly hall, whose dimensions reach 490m long, 250m wide and 46m high. This building also houses 34,000 m<sup>2</sup> of offices on six levels. The BMS is based on the PcVue SCADA software that monitors the fire alarm systems, air conditioning, and electrical distribution for all the 200 buildings on the site. Each station is a server for the other network stations and a client for the building information. This architecture allows the operating and maintenance personnel to have access to all information regardless of where they are located on site.

### TECHNICAL ENVIRONMENT

150,000 variables, a web portal, 200 APIs, 50 PcVue stations

## Chinese Channel Television / Beijing - China

Supervision of the electrical network of the building of the Chinese TV channel (CCTV)

### DESCRIPTION

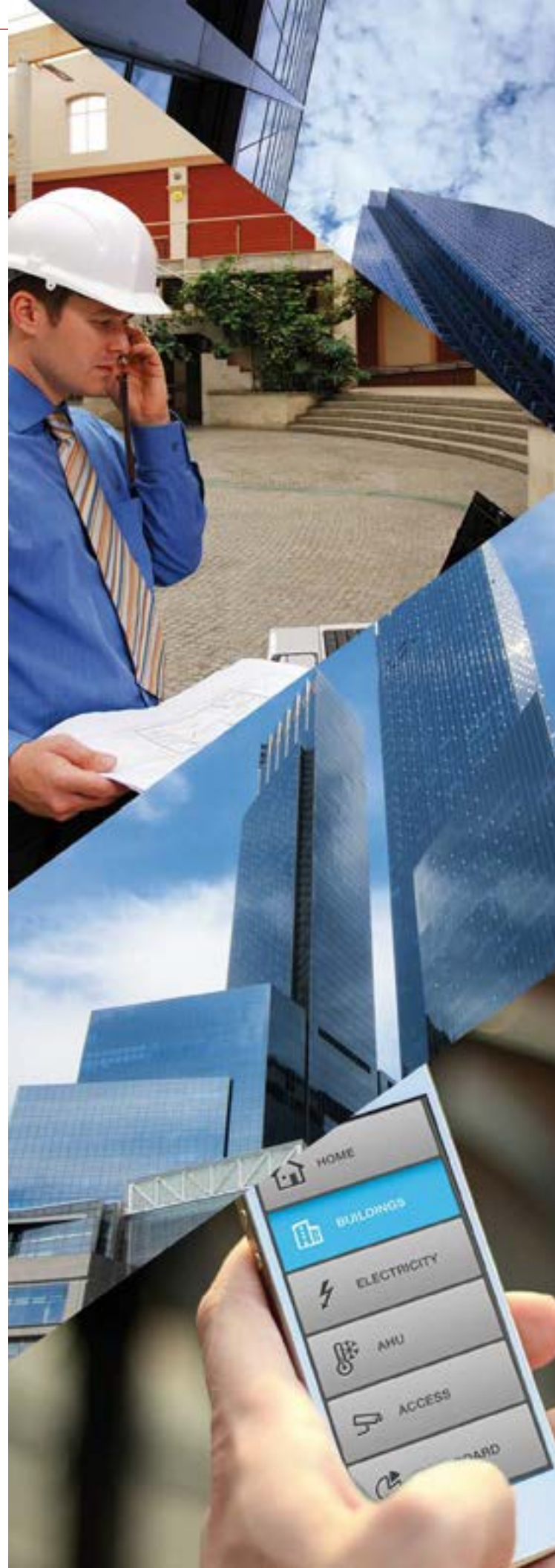
This 234m high building houses the offices of Chinese television, with a surface area of approximately 550,000 m<sup>2</sup>.

PcVue is used for the following functions:

- Acquisition of 3,200 TOR and measurement points of the installation
- Logging and archiving of events and faults with a time discrimination better than 100ms, managed by end timestamp
- Operator remote management
- Balance sheets for power (daily, monthly, quarterly and annual)

### TECHNICAL ENVIRONMENT

Public network 10 kV, 1 MT board of 32 cells, 16 transformers 10kV / 380V  
11 sub-stations equipped with a low voltage table, 1 Main API April 5000, 2 PcVue stations, 27 Sepam protection relays and Dialpact modules, Modbus Protocol



## Hôpital Edouard Herriot / Lyon - France

BMS of the Hospital

### DESCRIPTION

The Edouard Herriot Hospital is the largest hospital in Lyon. Built from 1913 to 1933, it has 32 wings able to accommodate more than 1,000 beds. The BMS encompasses several constructors: Honeywell, Johnson, Schneider and Siemens and covers the HVAC, electrical distribution and elevators with on-call management.

### TECHNICAL ENVIRONMENT

40,000 variables  
2 PcVue redundant servers  
11 PcVue Clients  
Honeywell, Johnson Control NT9100, Schneider Electric TSX 47 and Siemens S7 PLCs...

## Paris area Airports / Paris - France

BMS of one of the Paris airport Terminals

### DESCRIPTION

The BMS of the second largest air hub in Europe with around 63 million passengers per year covers the following technical equipment: The Low Voltage zones (one by building), the Climate zones (one per building), electromechanical zones, walkways and guidance patterns, the 400Hz network, the video surveillance system.

### TECHNICAL ENVIRONMENT

- 20,000 variables database (Application total of 50,000 points)
- 2 PcVue redundant servers
- 1 PcVue archiving server
- 7 PcVue SCADA workstations
- 10 PcVue Clients
- A hundred of Schneider Ecs PLCs
- WebVue access
- ModBus
- Ethernet

## COLUN / Chile

BMS of the COLUN factory

### DESCRIPTION

Founded in 1949, Colum is the largest dairy cooperative in Chile, with an annual throughput of over 500 million liters, and an average growth of 7% per year for ten years. Annual output of finished products reaches 220 million tons per year. PcVue supervises ventilation and air production

### TECHNICAL ENVIRONMENT

2 PcVue Redundant Servers  
3 PcVue Clients  
Siemens S7-1200 PLCs

## Hôtel Ritz / Paris - France

BMS of the hotel

### DESCRIPTION

PcVue covers alarms, ventilation and temperature management and lights of the famous Place Vendôme hotel

### TECHNICAL ENVIRONMENT

- 1 PcVue server  
- 10 PcVue RDS network Clients



# Your Independent Global SCADA Provider



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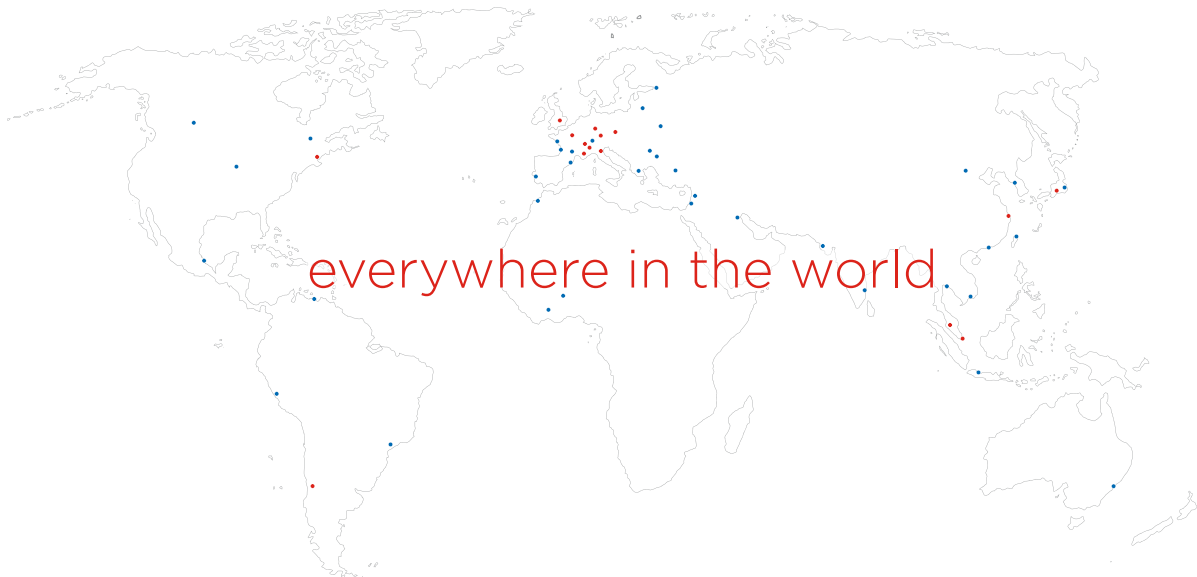
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