PcVue Solutions

by ARC Informatique

IoT, SCADA, BMS和实时分析的软件平台

COMPANY INTRODUCTION

Founded in 1981, **ARC Informatique** (https://www.pcvuesolutions.com/) is a privately held company headquartered in Paris that manufactures and markets industrial software. The company serves not only the process industries, but also the infrastructure, utilities and building management systems markets (Smart Cities, Smart Building, Smart Water).

With a proven track record in innovation, ARC Informatique is today focused on the integration of operational technology with information technology. In the era of industry 4.0, it offers a contextual mobility solution on mobile devices, aiming to ease the implementation, the utilisation and the maintenance of SCADA systems by mobile workers. The company is exploring the mobility front with an unprecedented solution that enables its customers to achieve **breakthrough improvements to efficiency of commissioning, operating and maintaining automation systems**. It has developed a mobility infrastructure that takes advantage of technologies such IPS (Indoor Positioning System) and GPS (Global Positioning System). It also features a contextual mobile HMI, as well as a rich graphical HTML5 web interface among other evolutions.

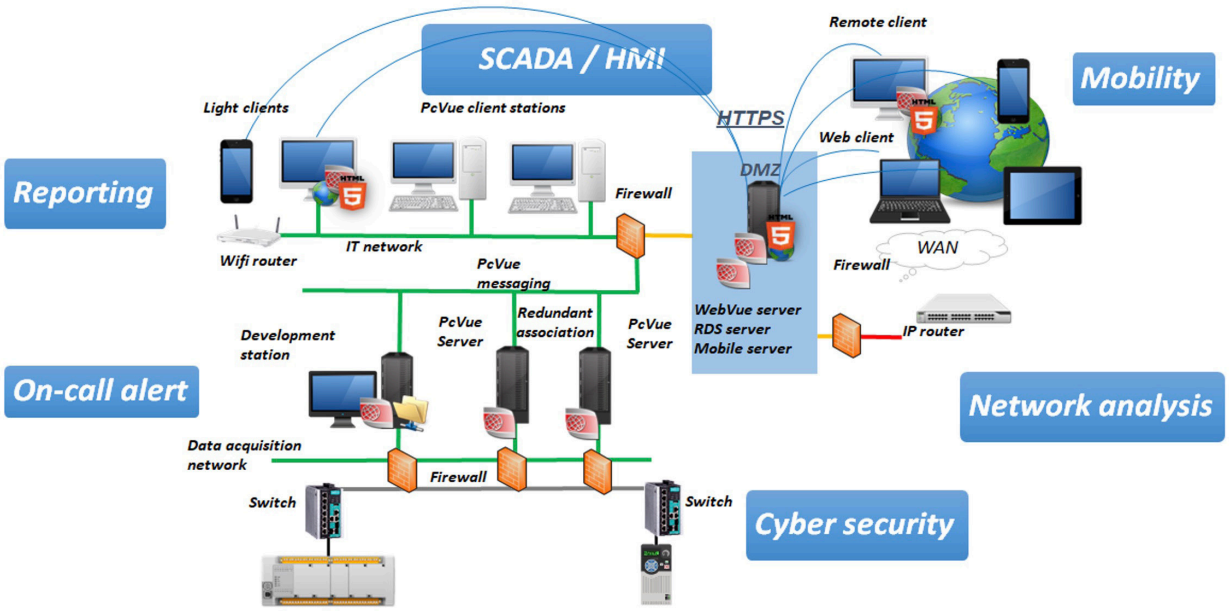
PCVUE SOLUTIONS

ARC Informatique sets itself as a leading company in this domain, by proposing solutions and services developed with the latest security technologies. The company's main product, **PcVue Platform**, provides a comprehensive solution for handling communication with industrial devices and systems, building flexible and secure network architecture, managing advanced alarm system and database. Through strong partnerships, PcVue completes its offer with a complete range of **Industrial Ethernet and cybersecurity equipment**, ensuring the safety of its clients' installations against external threats.

Since its creation more than 40 years ago, PcVue has been a **pioneer** in many industry revolutions in the monitoring and control applications: it was one of the first French SCADA under MS-DOS, a precursor for object-oriented SCADA under Windows & OS2, the prime 32-bit programming free editor, an earlier adopter of Web Client based on Java in the early 1990s, and the first editor to integrate 3D mimics in the early 2000s – among others.

Specifically, the PcVue Solutions portfolio is a suite of software and hardware products built around various products and services:

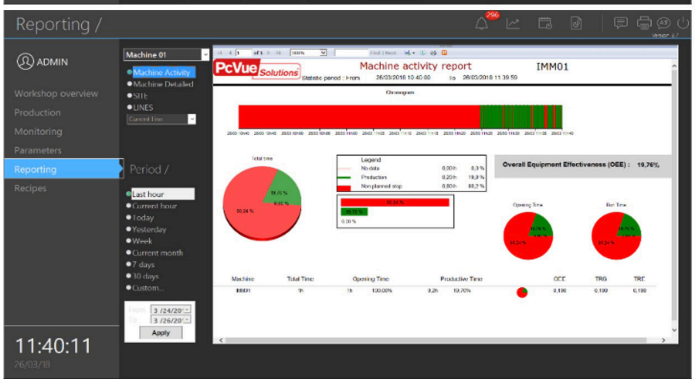
- **HMI-SCADA**: a secure, powerful and easily maintainable system, with built-in features that meet various market needs, granting optimised control over processes.
- **Real Time Reporting Software**: collecting and exploiting data from any source, accessing and interacting information from many industrial systems, while generating and distributing dynamic, real-time reports.
- **Advanced Connectivity Hub**: collecting and sharing data from IoT devices and bridging IT applications such as NO SQL database, social media tools, BIM and many others with OT applications.
- **Field Service Management**: assisting field operators perform better and more safely with the help of a virtual assistant and geolocalisation services using mobile devices or headset.
- **ICS Cybervision**: managing cyber risks by

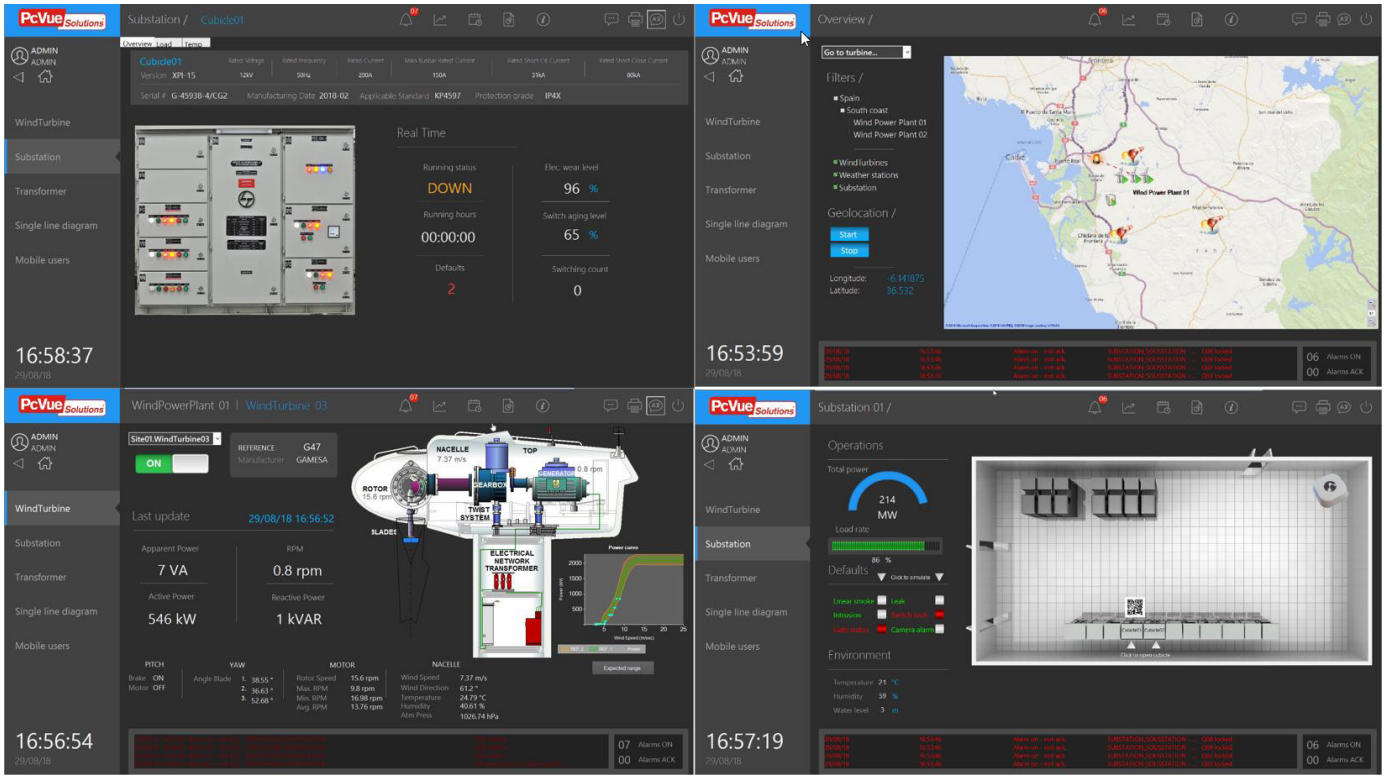


enabling control engineers to detect malicious behaviours and reduce the attack surface, facilitating incident response by gathering all the information required, and providing reports to the security officer.

PcVue provides solutions to clients involved in numerous sectors and industries such as building management, energy plants, factories, infrastructure, oil and gas, transportation, and environmental protection.

By embracing modern technologies in mobility, edge computing and artificial intelligence, it allows front-line workers to be connected remotely and in real-time to the full resources of the enterprise, other team members, maintenance operators and business managers, as well as with relevant experts. This significantly increases **resource efficiency, productivity, risk management** and **emergency preparedness**, as demonstrated throughout the COVID-19 pandemic.





For instance, for industrial clients, PcVue Solutions provides highly flexible, scalable and fully integrated control and data interconnection, with a large number of drivers such as Modbus TCP/IP, S7IP, ROCKWELL CIP, OPC, intuitive interface, alarm and event recording systems, and reporting functions. It thus **greatly improves the efficiency of the production process and product quality**, reduce downtime, avoid loss, track resources and follow strict industry regulations.

In the field of **transports**, PcVue provides SCADA software solutions to achieve optimal efficiency and maximum security in all aspects of passenger and cargo transport – from signal and traffic control to baggage handling systems, surveillance systems manage increasingly important systems in the growing infrastructure. It also provides intelligent solutions for transport automation for any type of clients, including airports, railways, trams, tunnels, subways, and highways. These are characterised by an open architecture, a large number of local data acquisition drivers and high scalability, making them easy to work with a variety of platforms and areas such as industry or energy.[1]

PCVUE SOLUTIONS IN CHINA

Certified ISO 9001 and ISO 14001 for quality, ARC Informatique has established an international presence through direct sales and technical offices in Asia, Europe, Middle East and Americas, as well as a network of partners and distributors. Among these, the Shanghai office was established in 2006, reflecting the importance of the Chinese market.

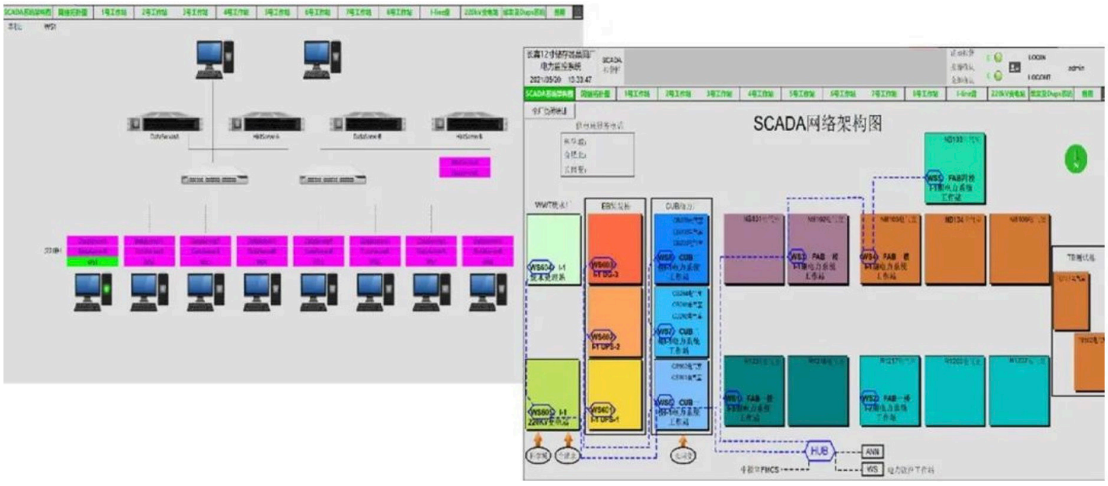
One of the key challenges of operating in China, compared to other clients from all over the world, is the **high level of customisation required to meet the unique demands and needs of Chinese clients**. In practice, this means that a new project needs to be developed for every new client; while in France and other countries, there tends to be a highly standardised version of the product which requires little to no customisation. Meeting such high customisation demands might prove challenging, also considering the large number of software providers competing for the Chinese market, not only from foreign developers but also increasingly from domestic developers. Yet, over the years, ARC Informatique has built a solid network of Chinese clients and project partners across multiple sectors. One of the most important is the **12-inch memory wafer manufacturing project with Hefei Changxin Memory Technologies** (aka Project 506, see next page) – which represents a cornerstone of China's efforts to become an international leader in electronics.

1 More information on PcVue's strengths and characteristics for clients in the industrial and transport sectors can be found (in Chinese) at: https://www.pcvue.com.cn/industry/ and https://www.pcvue.com.cn/transport/.

The **Hefei Changxin Project 506**, launched in 2018, is the first DRAM design and manufacturing integration project put into mass production by Chinese mainland. Launched in 2018, it aimed to establish an R&D and production base for 12-inch DRAM memory wafer, with a monthly capacity of 60 000 pieces per month, mainly used for electronic devices such as computers, mobile phones and mobile devices.

In partnership with the China Electronics Corporation NO.3 Engineering and System company, and Beijing Locamation Company, PcVue Solutions was in charge of **designing the power control system** based on the fundamental principle of maximum security and reliability. The field communication network was made redundant using 3-layer switches; a **3-layer redundant SCADA system** was implemented to ensure 100% uptime of the critical core system. Specifically, in the central control room, a central real-time data acquisition data server is connected to eight local servers. When one of the servers fails, it has two mechanisms of hot / cold redundancy. In addition, there is a central data acquisition server as a backup redundant server. Both are connected to two historical data servers for archiving and playback; they are also redundant and synchronised.

SCADA architecture



Project overview

The power monitoring of FAB is a key system, even more important than the process monitoring itself, because a failure can lead to production shutdown and millions of losses. Monitoring under different systems includes wastewater treatment stations, 220kV substations, 380V systems, UPS, diesel generator sets and dynamic uninterruptible power systems (DUPS).

The entire site requires 541 protective relays from ABB (RET615) and interval controllers from Alstom (C264), with the largest number of IEC61850 devices used in the industry. Overall, the SCADA system handles more than 40 000 IEC61850 device IO points in real time, as well as additional IEC 104 data points from subsystems (I-Line) and Modbus RTU and TCP/IP. As a data digitisation centre, PcVue shares data through OPC and other systems (FMCS, power dispatching and control workstations, etc.).

ARC Informatique recognised China as a very competitive market but remains **highly confident** about the future opportunities offered by the Chinese market. China has achieved its objective of becoming an innovation-driven country and is pushing further its investment and efforts to promote digitalisation, industrial internet and Internet of Things. Furthermore, China has already become a globally-recognised leader in the new energy vehicle industry – one of the key focus industries mostly benefitting from solutions offered by PcVue.

Do you want to know more? Visit the official website: https://www.pcvuesolutions.com/ or contact PcVue's team in China directly:

PcVue Shanghai (Representative) office

No. 228 Meiyuan Rd, Enterprise Square
Jing'an District, Shanghai

021-52400456 sales@pcvue.com.cn