

Software platform for IoT, SCADA, BMS & real-time data analytics



## TECHNICAL HIGHLIGHTS

# PcVue

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## 1 - QUICKSTART

The quickstart project, delivered with PcVue, allows the user to create in few clicks a custom designed project with a ready-to-go configuration without starting from scratch.

A configuration wizard guides you through configuring your project step-by-step:

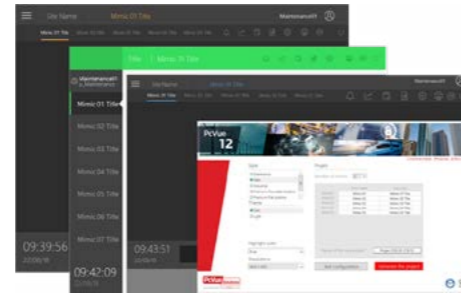
- select different designs and styles
- select the screen resolution
- create your menus

The Quickstart project generates a “ready-to-go” project including standard mimics and configuration:

- Trend viewer
- Logs and archiving ready
- Alarm viewer and system alarm ready
- User profiles
- Sample scripts...

Many styles and ergonomics are available:

- 5 styles
- 2 themes : Light/Dark
- 4 color skins
- 4 resolutions

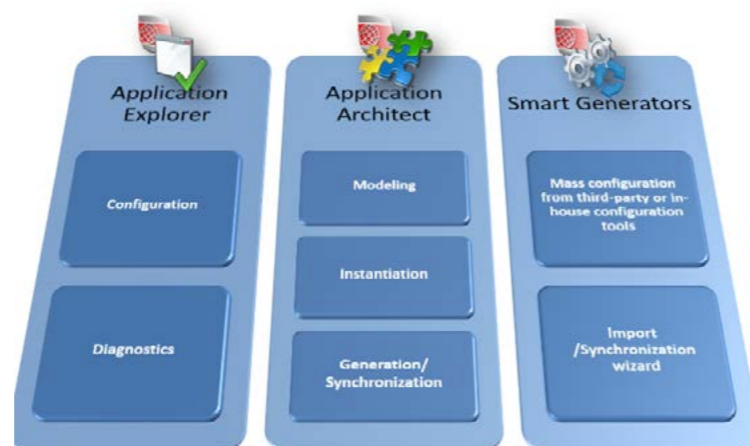


## 2 - PROJECT DESIGN - ADVANCED CONFIGURATION ENVIRONMENT

- Single, integral development workspace for all aspects of the software
- No compilation required - on-line modification for all project aspects
- The same mimic may be opened simultaneously in design and run modes
- Plain text and XML configuration files that open in third party editors: Excel, XML Editor, etc.
- An advanced configuration environment based on 3 tools:
  - **Application Explorer**  
Project design interface based on built-in configuration and parameters wizards to assist configuration
  - **Application Architect**  
Object templates-based tool for generating a project
  - **Smart Generator**  
To import configuration from 3rd party systems (PLCs platforms, softwares,...) and create the corresponding elements (variables and/or graphics) in the PcVue project...

Available for :

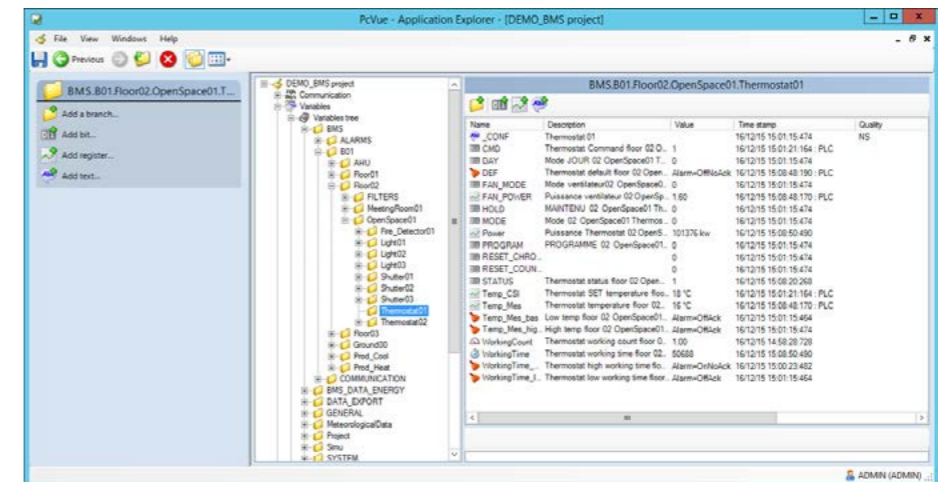
- TIA portal
- Unity pro®
- WAGO®
- MOXA®
- OPC
- ISaGRAF™
- CAD (AutoCAD)
- LNS®
- FactoryLink®
- STEP7®
- DALI®/WAGO®
- Stardom™
- Harmonas®
- SAIA PCD™
- TwinCAT®
- BACnet™
- Generic XML



## 3 - REAL-TIME DATA

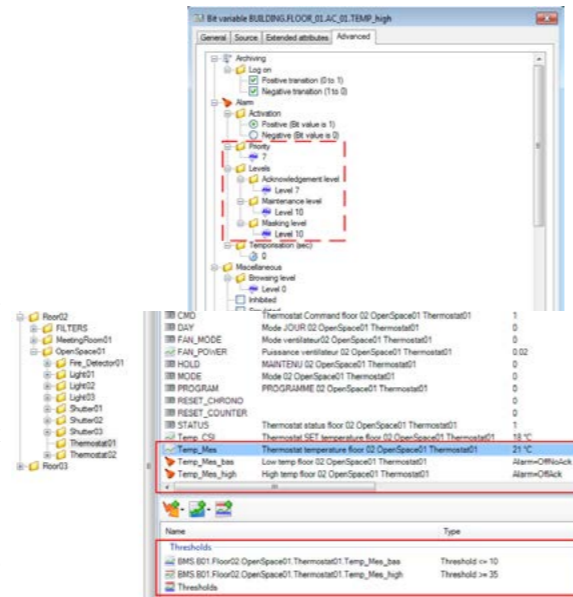
The real-time data is the core of PcVue and it is composed of a set of tags called «variables» that contain the data to be supervised and displayed in mimics. Variables can also be used to trigger actions, be recorded and for various other behaviors.

- Object-oriented Variables Tree
- Hierarchical variable name structure
- Variable types: bits, registers, texts, and alarms
- Each real-time data is defined by a VTQ- Variable Time Quality
- Support for time-stamped data (coming from the device using time-stamped driver)
- Conversion to physical values
- Deadbands (% scale, % value, absolute)
- Discrepancy checking
- Expressions and formula calculations
- Associated labels for variables to describe them explicitly in mimics, alarm lists and event logs
- Multiple boolean & text user attributes associated with variables
- Filter-Search-Sort can be applied to alarm, historical and trend viewers depending on those attributes
- Chronometer and counter variables
- Level threshold detection system plus hysteresis on analog variables
- Archiving
- Event action : Run a program on value change



### 4 - ALARMS

- 5 alarm states and 30 alarm levels
- Positive or negative logic
- Alarm counters by value, level, attributes etc.
- Temporization before activation
- Thresholds mechanisms
- Automatic sending of acknowledgements to PLCs
- Automatic masking by dependency and manually masking by user action
- Logging of alarms to disk and/or continuous printing
- Optimized alarm states shared among PcVue network stations
- Customizable alarm viewer
  - Filter, Search and Sort on alarms by state, levels and/or attributes - modifiable online
  - Filtering of alarm processing by station
  - User masking of insignificant alarms with password locking (30 levels of masking)
  - Action/tip information associated with each alarm
  - Fully configurable alarm colors according to level and state



- Event-driven exchange with the PcVue kernel
- Polling interval is configurable for each data frame
- Prioritized queuing of user commands
- Supports time-stamping at field device level
- Recording and display of the time-stamp from the source (field device or PcVue)
- Time-stamping of data with millisecond accuracy
- Built-in tools for diagnostics & data flow auditing
- MQTT



### 5 - DATA ACQUISITION

Data acquisition supported with PLCs, controllers, Fieldbus I/O and other industrial equipment via serial port, Ethernet card, IoT, manufacturer specific

See 'Communication Protocols' on

<https://www.pcvuesolutions.com/index.php/support-a-services/resources/communications-drivers>

Including but not limited to:

- Built-in IoT driver for LoRa Wan
- Built-in BACnet® driver BTL listed for the B-AWS highest level profile
- Built-in LonWorks driver supporting LNS-TE
- Built-in IEC 60870-5-104 server/client driver with redundancy
- Built-in IEC61870-5-101
- Built-in IEC60870-6/TASE.2 - ICCP (Inter Control Center Protocol)
- Built-in DNP3 client driver
- Built-in IEC 61850 client driver, DNV-GL certified - includes support IEC 61400-25 for wind farm and DER extensions
- Modbus TCP/IP slave/master
- OPC-DA Client and server, OPC-XML DA client, OPC UA ,
- Support of V1, V2C and V3 version of SNMP Manager/Agent , Browsing of OID and Management of unsolicited data from Trap messages



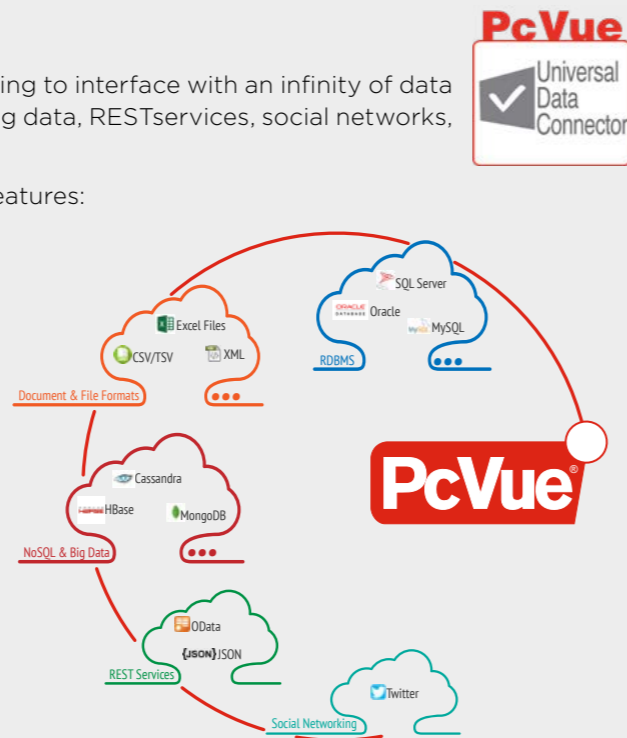
## 6 - INTEROPERABILITY

### 6.1 - UNIVERSAL DATA CONNECTOR

PcVue features a SQL bridge based on ADO.NET allowing to interface with an infinity of data sources thus opening up to DBMS, ERP, MES, CMMS, Big data, RESTservices, social networks, files...

The Universal Data Connector includes the following features:

- Connect cloud or on premises data sources
- Handles all the connection, and redundancy mechanisms
- Connection to an Azure database
- Centralized connection strings
- Supported in web and mobile client
- Support for SCADA BASIC script and SV manager toolkit
- Support for displaying data with a grid
- Support for SQL requests SELECT, INSERT, UPDATE
- Map a PcVue variable as any other driver
- SQL request can be executed on event or cyclically



### 6.2 - DATA EXCHANGE STANDARD

- OPC DA (V1.0,v2.0,v3.0) Client/Server, OPC UA (v1.03), OPC XML (v1.0)
- SNMP manager & agent, versions V1, V2/V2c et V3.
- File transfers via built-in FTP client
- Import/Export text files (csv,xml,...) tool

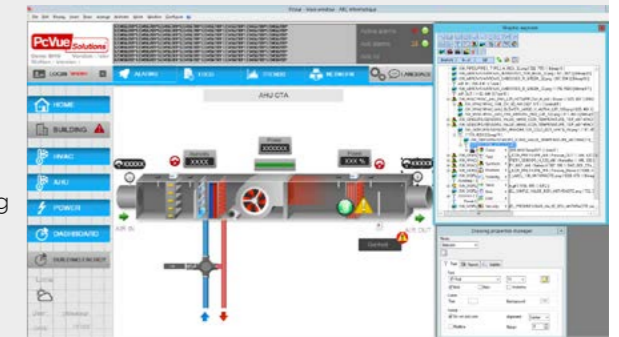
### 6.3 - SOFTWARE DEVELOPMENT KITS

- Generic import toolkit: xml file import to generate a PcVue project configuration
- Manager toolkit: development of exchange interfaces between PcVue and third-party systems using DLL users
- Protocol toolkit: to develop a specific master/slave driver using the data acquisition core of PcVue
- Webservices toolkit: to develop a webservices client connected to PcVue using SOAP or REST services

## 7 - USER INTERFACE

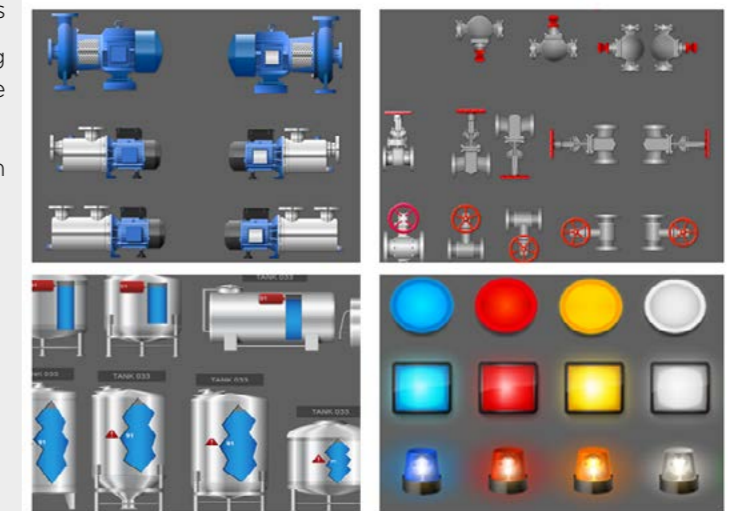
### 7.1 - DESIGN

- Vector drawing tool
- Unlimited number of mimics
- Mimic templates
- Totally configurable appearance of windows, including to/from child and parent windows
- Auto scale depending on the screen resolution
- Mimics up to 10,000 x 10,000 pixels in size
- Mimic cache management for speed up mimic display
- Iconizing of mimics
- Option of plain text mimic format allows mimics to be created and edited with an external application
- Microsoft VBA included in the graphical interface
- Integration and manipulation of ActiveX and .NET components
- Color palette of up to 16 million colors
- Color selection by color picker
- Color gradients for 3D effect
- Blinking and transparent colors
- Graphic Explorer: visual browser to display and change object properties without ungrouping them
- Drawing properties manager to configure a set of properties of a group of graphical objects



### 7.2 - LIBRARIES

- Thousand of objects and animated symbols in libraries, generic or market oriented
- Supported image formats: WMF, EMF, GIF (static, animated), BMP, JPEG, PNG, and AVI
- Images, animated symbols, object templates
- Predefined object templates including variables, behaviors, graphics, to modelize and generate a project
- Libraries designed for building custom symbols in a modular way
- Markets librairies



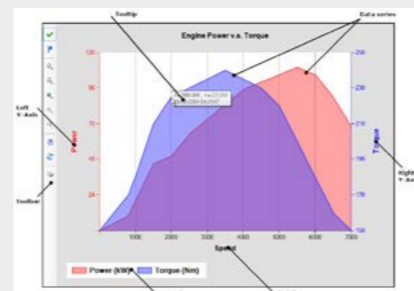
### 7.3 - RUN-TIME

- Over 60 animations including text, color, position, and send command
- Multiple animations can be applied to the same drawing element
- Ability to associate mimic animations with shortcut keys
- Versatile ways of notifying loss of communication with equipment
- Animation of real 3D embedding objects using DirectX technology
- 16 design layers with locking according to user's access level
- Decluttering support to hide or display graphic elements according to zoom layers
- Zooming onthefly to enlarge a mimic area on a separate display
- Use of expressions and substitution strings in animations
- Grid animation: a facility for displaying and modifying information in a spreadsheetlike grid of cells
- Contextual tooltips on animations
- Ready for use touchscreen: virtual keyboard, large tool bar, large scroll bar
- Built-in control forms: listbox, combobox, checkbox, grid, textbox, option button, tree view
- Mimic navigator control for large mimics
- Mimic tab control

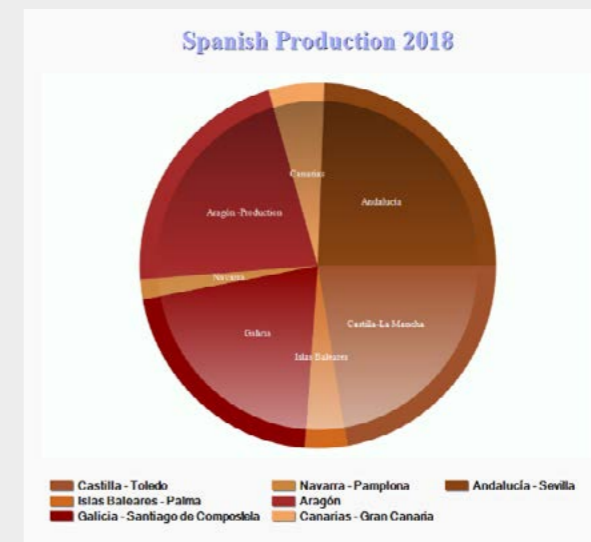
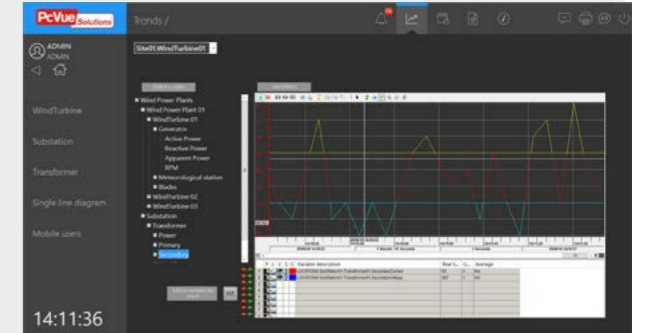


### 7.4 - TRENDS

- Built-in control that can be embedded in any mimic
- Up to 100 traces per viewer
- Same user interface for both real-time and historical trends which can be displayed simultaneously
- Highly adaptative interface
- Fully customizable legend to display properties, and/or dynamically hide/show traces, scales, change color, set thresholds display,...in run time
- An easy to use calendar to search and display a specific period for a trend window
- Multiple zoom capability



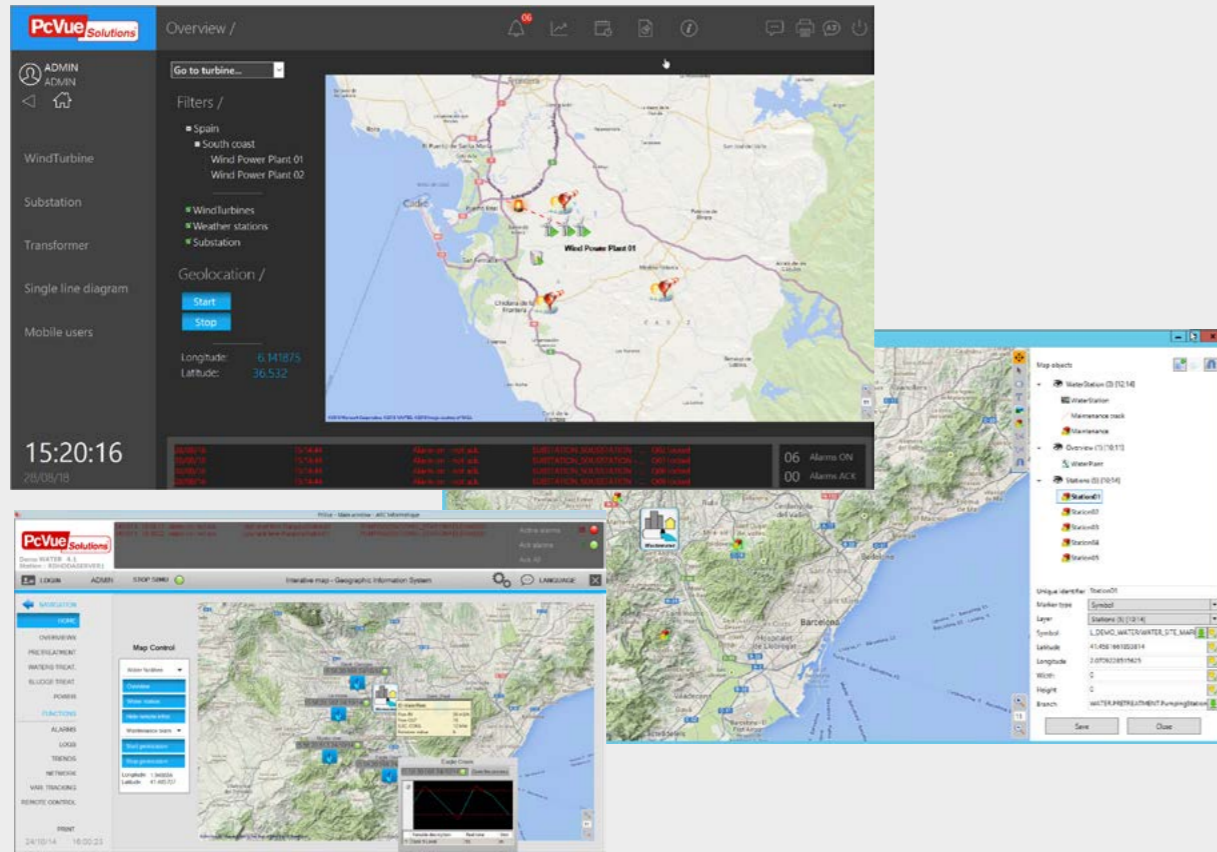
- A simple wizard to export in run-time trend data including statistics to Excel, xlsx, csv files
- Dynamic configuration of trend viewer look and feel in design and run modes, with optional locking
- $Y=f(t)$  trends and  $Y=f(X)$  chart controls
- Logarithmic trends
- Customizable trend viewer
- Simultaneous display of real-time and historical data
- Zoom in and zoom out in time axis or both time and value axes
- Cursor for reading selected values
- Multiple dynamic and scrolling scales
- Dynamic addition, deletion and substitution of variables by operator at run time
- Printing of displayed trends on graphical printers
- Ability to draw lines for thresholds, Min & Max
- Specific colors when the trend rises above or falls below thresholds, Min or Max values
- Save custom user settings (trends, colors, styles,...)
- Add contextual trend in one click



### 7.5 - GEO MAP CONTROL FOR GIS DECISION MAKING

- Built-in PcVue component client for a GIS mapping service
- Displays an interactive map supplied by map providers (Online&Offline both supported)
- Allows an easy map manipulation with integrated functions such as panning and zooming
- Displays overlays with custom dynamic objects (markers) including PcVue animated symbols
- Turns any PcVue symbol into a marker on a map with an associated position
- Basic markers, such as shapes, images or texts
- Display/control of variables value or attributes

- Popup and mimic open on markers
- Markers and layers stored in a standard GPX file automatically loaded and rendered by the map control without import/export
- GPX files editor provided to create and to edit GPX files
- Map cache creator provided to retrieve map data online and to prepare the map cache for offline runtime usage



## 8 - ARCHIVING DATA

### 8.1 - HDS - HISTORICAL DATA SERVER

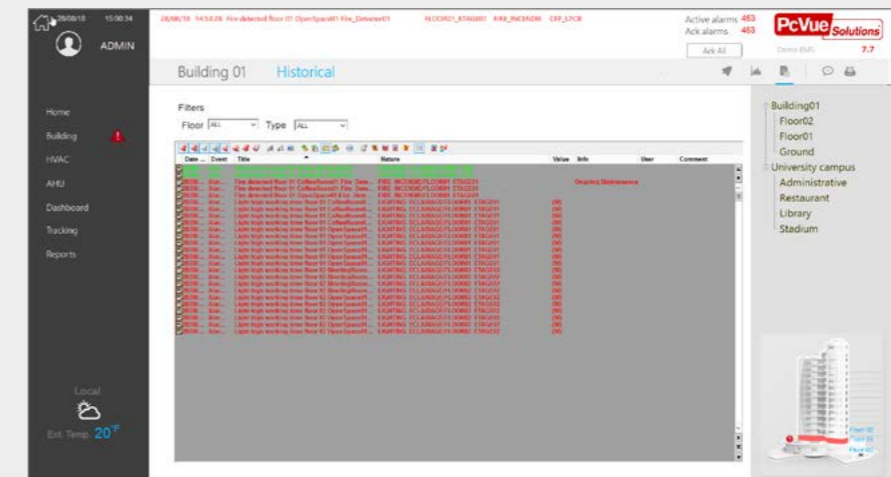
- Historical Data Server records in, and replays from Microsoft SQL Server. Microsoft's freely distributable SQL Server Express edition included
- Wizard to configure SQLServer database
- Support for Microsoft SQL Server 2008 R2, 2012, 2014, 2016 and 2017
- Built-in - records in, and replays from, PcVue's own native data storage system. Highly optimized data recording for maximum performance
- Database Creation Wizard guides you through the process of configuring data recording using the Historic

### Data Server

- System variables to monitor data archiving
- Log lists allow recording & displaying events, alarms and user actions in the same event log
- Back-up/restore mechanism from archive unit folder to the back-up folder
- Redundant SQL Server databases and replication management
- Viewing and maintaining SQL database properties and contexts
- Integrated database maintenance for non SQL Server specialists
- Grid for historical: Display trend data in a grid - Filtering - Color change on threshold and quality - Export to Excel

### 8.2 - EVENT LOGS

- Access to Client/Server event log
- Option to append comments to events in the event logs
- Dynamically modifiable filters by attribute
- Customizable event viewer
- Formats for historical logging are configurable for easy export to third-party software
- Logging of alarm values, user login/logout, program execution, alarm masking, changes to variable states etc.
- Filtering and sorting of events
- Automatic update on new event recorded



### 8.3 - ADVANCED CONTINUOUS RECORD/REPLAY FEATURE

- Replay of historic variable values through mimics at various rates
- Facility for data recording for several weeks
- Replay information event by event to analyze incident sequences

## 9 - DATA PROCESSING AND REPORTING

### 9.1 - DATA EXPORT

- Data export as text files or into Excel
- Facility to export all archived bit and register data, from event logs and log lists
- Data extraction using criteria by date and/or batch number etc.
- Statistical calculation
- Extraction request is built using a graphical editor
- Sampling period from 1 second to several days
- Automatic running of requests for PcVue to generate summaries, at end of each batch run, change of team, day, week, month etc.
- Automatic starting of an Excel macro after data extraction for report formatting

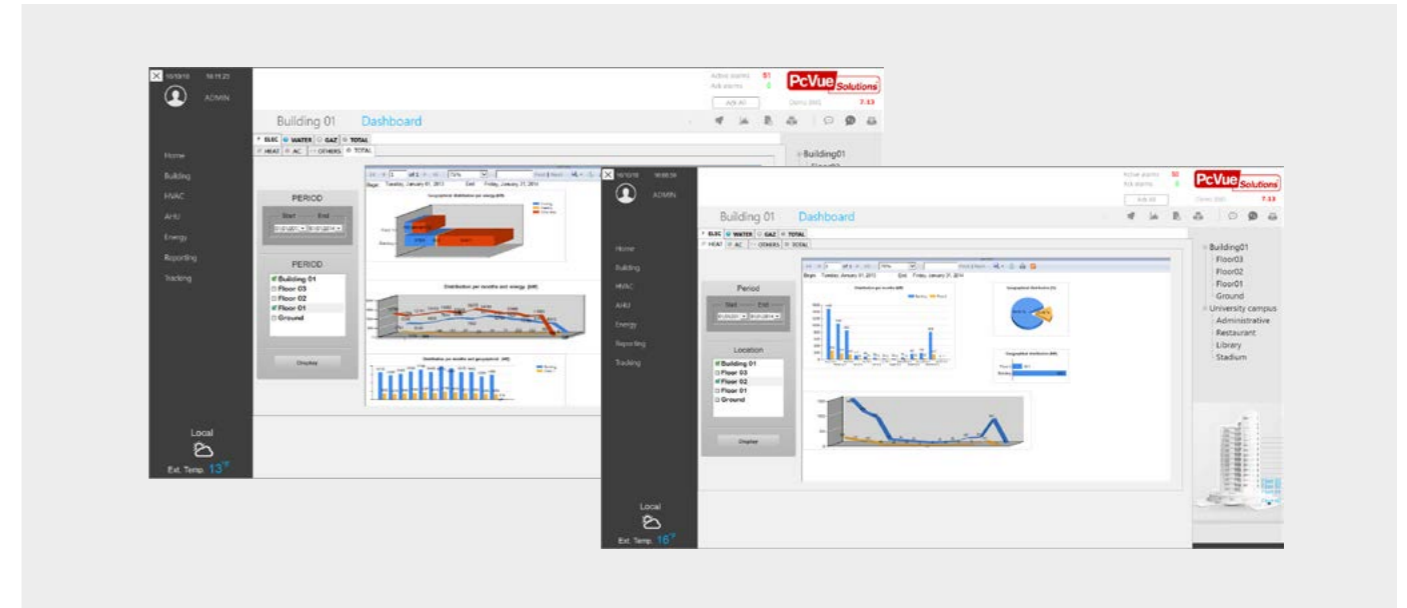
### 9.2 - DREAM REPORT

- Advanced, powerful reporting functionalities using Dream Report software
- Built-in connection with PcVue using OPC or Webservices
- Support for PcVue HDS databases
- Generation of reports : automatic (on schedule, or on event) or on demand
- Various output formats : PDF,XLSX,CSV
- Calculation :  
min,max,average,duration,counter,SQL,free mathematical formula,...
- Web portal for access report and generate on demand report



### 9.3 - MICROSOFT SQL SERVER REPORT SERVICES (SSRS)

- Support for Microsoft SQL Server Report Services reports (SSRS)
- SSRS reports integrated seamlessly within a PcVue project, with the ability to display them in mimic and filter the data displayed



## 10 - ON-CALL MANAGEMENT

### 10.1 - SMS AND EMAILS

The broadcast of events notifications such as alarms, or real time data from the process is possible using SMS or Email directly sent from PcVue.

- Built-in device configuration
- Priority levels definition
- Possibility to define message templates including static or dynamic parameters as well as substitution characters associated with the context (value of a tag at the time of the message delivery)
- Automatic delivery of messages on alarm, event or any action

### 10.2 - ADVANCED ON CALL MANAGEMENT WITH ALERT SOFTWARE

- On-call management by Alert software
- User management and organizing the surveillance
- Message transmission to fixed and mobile devices, GSM, radio
- message, beep, fax, email and Internet browser
- Facility to acknowledge remote alarms according to the terminal used
- Facility for voice synthesis to generate audio messages
- Interfacing with OPC servers
- Monitoring the supervisory application and sending an alarm if failure occurs
- Managing redundant Alert stations
- Logging / history of events arising on the Alert system



## 11 - SCHEDULING

- Built-in scheduling engine for automatic send of commands, recipes, or programs
- One or more fully configurable tasks
- Exeption period

### 11.1 - WEBSCHEDULER

- Web display for visualizing and controlling scheduled tasks from a web browser
- Can be embedded in PcVue
- Designed for maintenance and operational users
- User-friendly interface

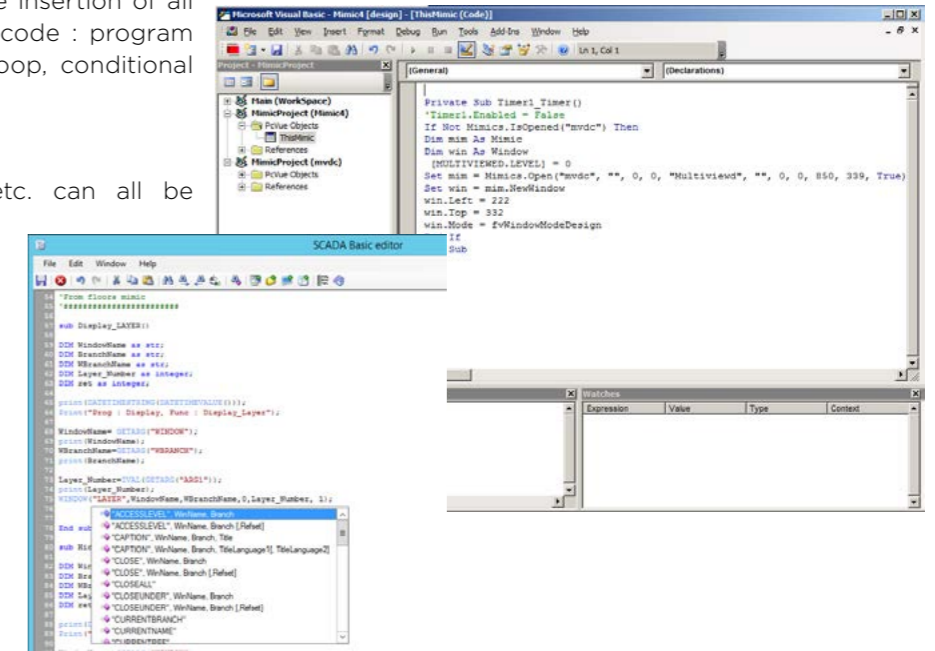
## 12 - RECIPES

- Recipe sent on demand or by event
- Up to 1,000 variables (register, and/or bit and/or text) per recipe
- Option to create a recipe based on real-time values
- Inspection and modification of values before sending
- Management of recipes from a relational DBMS
- Use recipes to retrieve and save process setpoints
- Easy logging by using a product batch index to facilitate the extraction of historical data by batch number

## 13 - SCRIPTS EDITORS

- SCADA BASIC - Specifically created to work within the PcVue environment and extend its features
- Advanced functions dedicated to supervision
- Modular structure
- Arithmetic and boolean operators
- Triggering on event
- Access to DLLs
- Access to the variables tree, historical data and alarms
- Control of multimedia peripherals
- SQL support
- Comprehensive editor with syntax highlighting, auto-completion and code snippet insertion
- Contextual help for language instructions

- Code snippets to automate insertion of all frequently used pieces of code : program and function comments, loop, conditional statements, new Sub etc.
- Microsoft VBA Scripting
- Trends, alarms, mimics etc. can all be scripted



## 14 - SECURITY & SAFETY

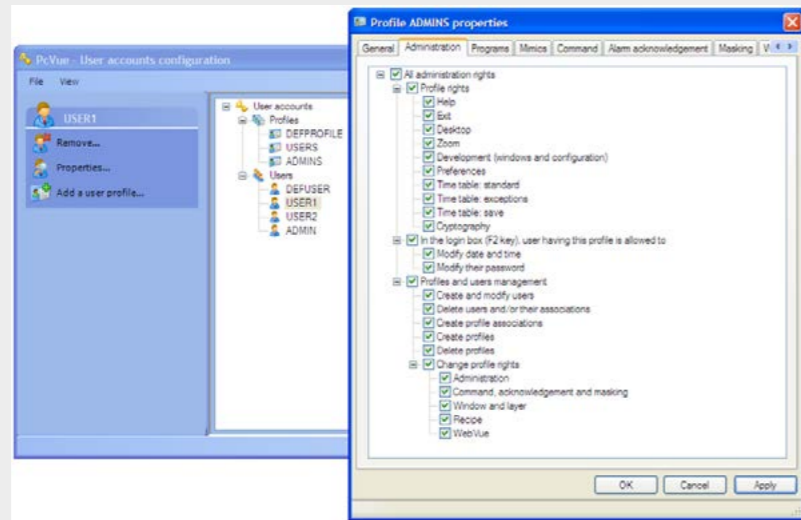
- Protection of server components
- Deployment of PcVue server components as services and PcVue clients components as desktop applications
- Comprehensive client tools for configuration & diagnostic
- Tool to control event flows at the heart of the system
- Log file of system events for diagnostic analysis if failure occurs
- Cybersecurity protection for critical industrial systems with Cyber Vision center - Sentryo
- Quality process for validating software

### 14.1 - ACCESS RIGHTS

- Unlimited number of users
- Single Sign-On Support: simpler management of user rights
- Management by profile for maximum flexibility
- Password strength control



- Up to 30 hierarchical profile levels
- Facility for locking access to particular mimics, command variables, log variables, alarm acknowledgement and masking, WebVue etc.
- Control of reading, creation, changing and sending of recipes
- Possibility to apply different access profiles to the same user depending on the station in multi-station architectures
- Password validity limited by date
- Ability to require password change on first login



### 14.2 - 21 CFR PART 11 FEATURES

- Individual electronic signature for each user
- Option for double signature on sending commands
- Each name/password combination is unique
- Automatic logout either programmable or after a period of inactivity
- Locking after a number of unsuccessful attempts
- Recording of failed attempts to log in, with option to notify the system administrator
- Guarantee of integrity of historical data by CRC
- Logging of previous value when a value is changed



### 14.3 - INSTALLATION PACKAGES

- Installation package signature
- Binary files signature

## 15 - ARCHITECTURES & DEPLOYMENT

### 15.1 - SUPPORTED PLATFORMS

- **Client stations**
  - Windows 7 (SP1), 8.1 and 10
- **Server stations**
  - Windows Server 2008 R2 (SP1), 2012, 2012 R2, 2016 and 2019
  - Data acquisition & Historical data servers
  - Web server
  - Remote Desktop Services
- **Microsoft SQL Server**
  - 2008 R2, 2012, 2014, 2016, 2017 & 2019
- **Virtual environment**
  - Support for HyperV and VMware
- **Running mode**
  - Support for PcVue application as a service
- **Licensing**
  - Hardware dongle
  - Software license



### 15.2 - ARCHITECTURES

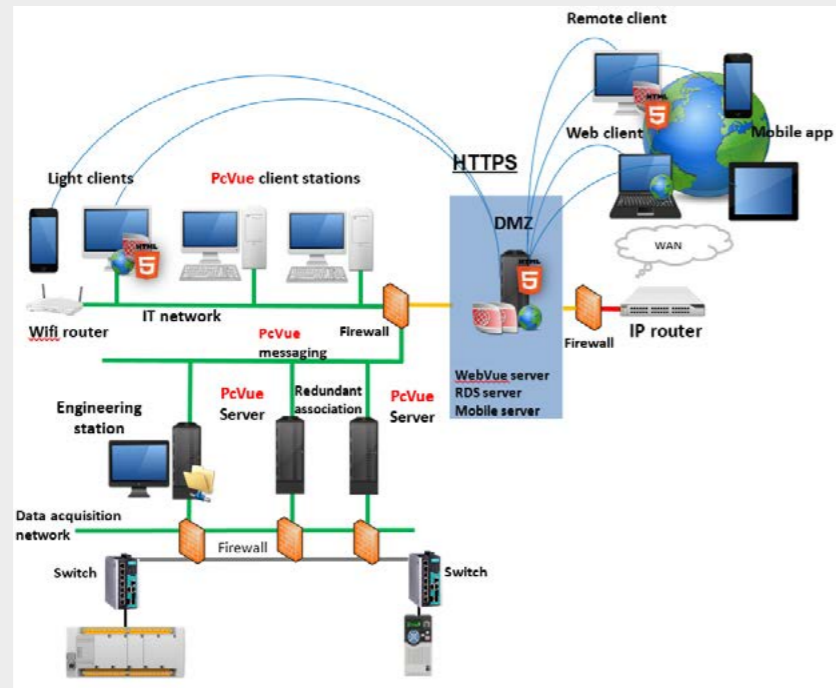
The typical architectures are as follows:

- **Standalone** - All SCADA functions are incorporated into a single station
- **Multi-station architecture** - The SCADA functions span across two or more stations in a client/server architecture
- **High availability architecture** - The SCADA functions and roles are distributed to offer better resilience and scalability.
  - Multi-station deployment includes the following particular scenarios:
    - *Data acquisition redundancy* - Two or more stations are configured as redundant (hot standby).
    - *Historical data redundancy* - Two or more stations are configured as redundant (hot standby).
    - *Mutualized servers* - One high\_end server is used as the stand-by server for multiple others.
- **Distributed architecture** - Several independant servers feed many client stations
- **Three-level architecture** - Using one or more stations as a gateway
- **Engineering station** - dedicated to design and manage a project with version management
- **Web & mobile** - Web server and web-based mobile clients

Features:

- Built-in interstation messaging using TCP/IP
- Exchanging values of variables in real-time: internal, equipment and historical
- Single configuration of the database for distributed architectures
- Script-free configuration wizard
- Built-in automatic redundancy mechanisms

- Built-in and script-free historical database replication in Microsoft SQLServer
- Built-in centralized version management of projects and libraries
- Concentrator station and archive server
- Administration of network users' access rights
- System variables to indicate the status of network stations and of the connections between them
- Deployment of changes and creation of variables across the network at run time



## 16 - WEB & MOBILE SOLUTIONS

Web and mobile solutions of PcVue lean on an exclusive technology *EasyMobileTechnology* allowing to setup mobile architecture with no gateway/plugin, embedding all the necessary security features (https, Oauth, certificates) and the HTML5 technology as well as maintenance tools.

This technology fits the following criteria:

- No gateway, no extra plugin
- No installation on client side
- Easy settings - no scripts - Wizard only
- Open to third-party application
- Adapted to any users: end-user, SI, IT
- Secure scalable architectures and communication
- Easy Diagnostic

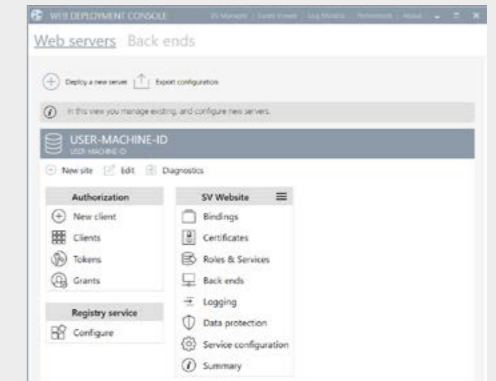


## 16.1 - WEB DEPLOYMENT CONSOLE

The web deployment console is a component for setting, deploying and maintaining a web or mobile architecture.

It supports the following features:

- Deployment of web services and web apps on IIS
- PcVue Web Back-end endpoint management
- Data protection management
- Certificate management
- User access logging & OAuth Server management
- IIS auditing / diagnosis



## 16.2 - WEBVUE - HTML5 WEB CLIENT

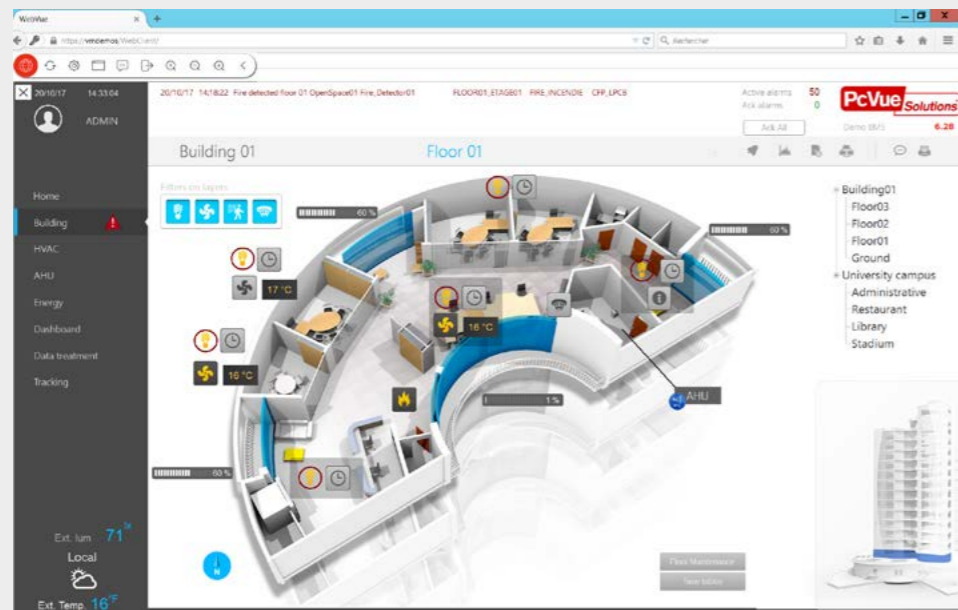
WebVue uses a web browser and an internet or intranet connection to provide remote display and control of your processes. A user with appropriate user rights (user name and password) is able to access the PcVue SCADA application from anywhere on the network. WebVue is independent of the operating system as it runs on a web browser and it displays PcVue mimics directly without requiring any modification.

Communication between the PcVue Web Server and the WebVue client uses Microsoft IIS technology and the enterprise firewall jointly to manage security. The WebVue client is continually refreshed and data exchanged HTTPS.

WebVue is compatible with the main web browsers. Using PcVue's public Web Services you can also create a custom web portal to access the real-time and historical data of PcVue on mobile phones, tablet PCs etc. via standard web pages.

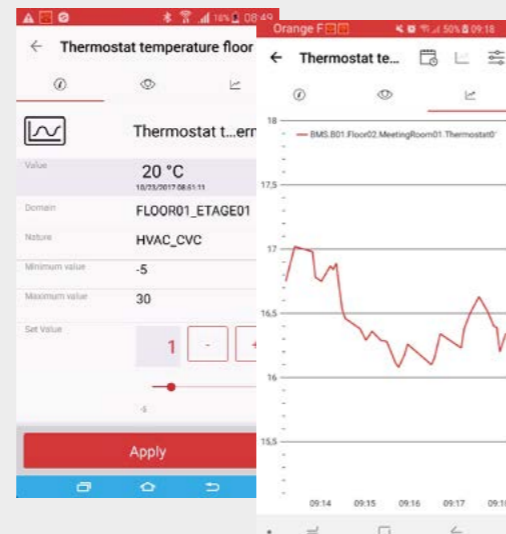
- HTML5 technology
- Real-time monitoring and control and access to historical data, trends and events are possible from the web client interface for an operator with appropriate user rights.
- The mimics displayed on the web client look the same as the mimic visible from the SCADA stations clients or servers.
- It is not necessary to develop specific mimics and views for the web client capability. Meaning the mimics developed for the SCADA application are automatically compatible with the Web Client. This in order to avoid extra engineering and to allow operator users to be immediately familiar with the Web SCADA interface.
- Auto log off feature to automatically log off a user connected to the web client after a determined inactivity period.
- Facilities for remote commands and acknowledgement of alarms (according to user rights)
- No software installation necessary on the remote station
- Optimized data exchange for mimic updates
- Encrypted data exchange to prevent problems of hacking
- Several users may be connected simultaneously to the supervisory application managed by the web server station
- Several connections are possible on the same webbrowser using several tabs

- No license required on the client station
- An operator with Web Client access has the same rights from the Web Client interface as on the SCADA application itself.
- There's no limitation to the total number of potential web users.



### 16.3 - TOUCHVUE - NOTIFICATIONS MOBILE APP

- On-call/on-duty mobile app for PcVue
- Access the data from several sites
- Real-time information and notifications (alarms, values, trends) for immediate action (acknowledgment or control values)
- Archived data (events logs, historical trends)
- Data filter depending on user profiles
- Watchlist for favorite variables to watch
- Multi-pens trends

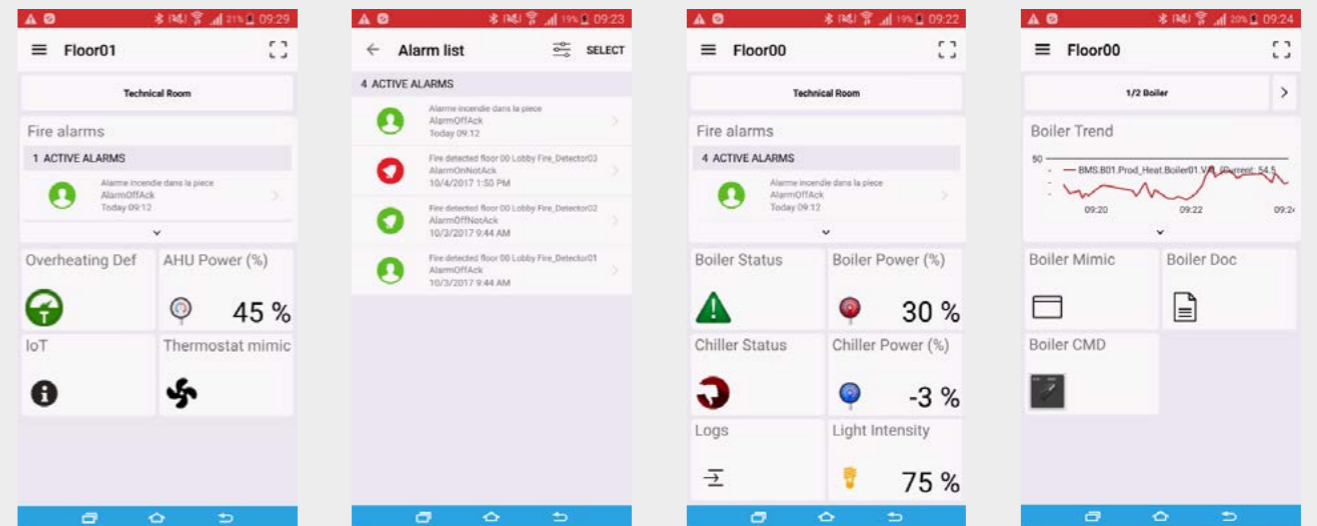


### 16.4 - SNAPVUE - GEO-CONTEXTUAL MOBILE APPLICATION

- Monitoring and control of nearby installations according to the location and the role of the user.
- Using geolocation, the SnapVue application provides a dynamic HMI that changes as the user moves in an area. It automatically adapts to the role of the user and allowing him to supervise the installations which surround.

#### FEATURES AND SERVICES:

- Indoor / outdoor geolocation using IPS (Bluetooth Low Energy tags, QRCode, NFC, Wifi) and GPS allowing the management of teams and mobile maintenance devices.
- Contextual information and automatic controls
- Graphic HMI on mobile devices
- Display and control of values in real time
- Alarm and event management
- Visualization of trends allowing visibility anytime and anywhere
- Access to resources: audio, video, user manuals, documents in general, etc.
- Integrated messaging (audio, videos, images, texts) to communicate with a control room or other mobile users
- Asset tracking
- Interactive and intelligent Smart bot companion answering the user's questions



### 16.5 - REMOTE DESKTOP ACCESS

- Supports for the feature « Remote Desktop Services » which allows instances of PcVue to run remotely
- Support for any devices that supports Remote Desktop, including HTML5 compatible devices.
- Allows a user to access the PcVue application remotely with exactly the same features as a local client station.
- High level of security since only the keyboard and mouse activities transit over the network reducing the risk of data corruption.

## 16.6 - WEB SERVICES

- REST (JSON) WebServices Interface to PcVue
- SOAP (XML) WebServices Interface to PcVue (Web Services Toolkit)

Supports the following services:

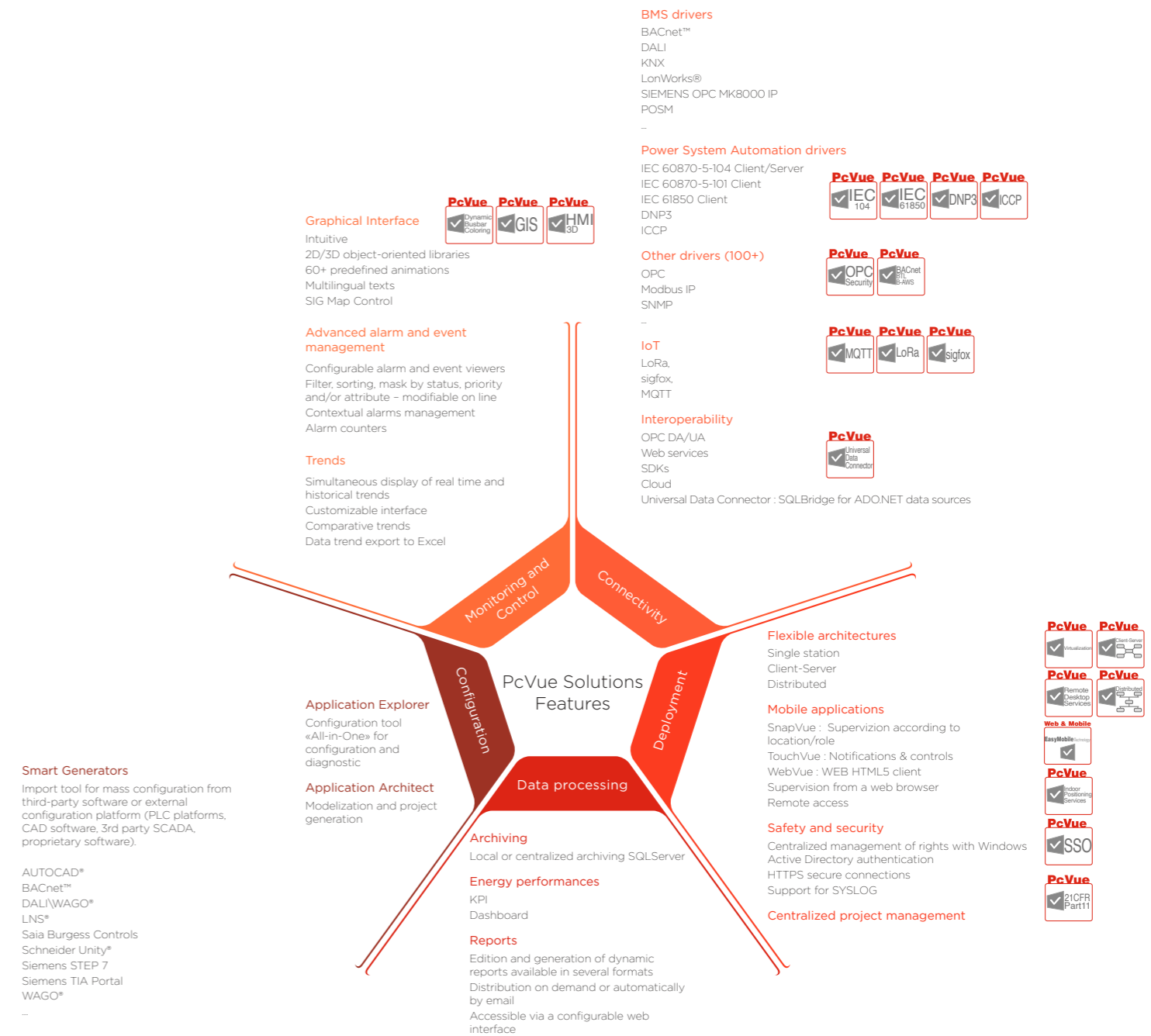
- Session Data (SOAP only)
- RealtimeData
  - Browse variable database
  - Read/Write variable values and extended attributes
  - Subscribe to one or multiple variables
- RealtimeAlarm
  - Subscribe to alarms
  - Ack/Mask/Unmask alarms
- HistoricalData
  - Request logs from a loglist
  - Request trend data for one or multiple variables
- Requires HTTPS, does not work with insecure HTTP
- Fully integrated with the OAuth Server, access via Bearer Token Authentication or Cookie Authentication
- Fully integrated with Web Deployment Console, thus easy to deploy and simple to configure
- Supports the DMZ architectures and all-in-one architectures



## 17 - COMMISSION TOOLS

- Diagnostic tools : check for data flow, counter of internal resources
- Variables monitoring: built-in component for monitoring and control real-time data of the project.
- System variables : Set of variables to monitor key performances indicators of the system.
- Event log : displays in real-time every messages, information or errors from the core of PcVue system, allowing tracking any abnormal behavior and understanding any malfunction.
- Support for Syslog
  - Comply with the ANSSI and IEC 62443 requirements for logging & tracing
  - Support for Windows Event viewer and Syslog over UDP, TCP & TLS - RFC 3164 & 5424

## PcVue Features



# Mastering interfaces between #Humans #Systems #Connected things

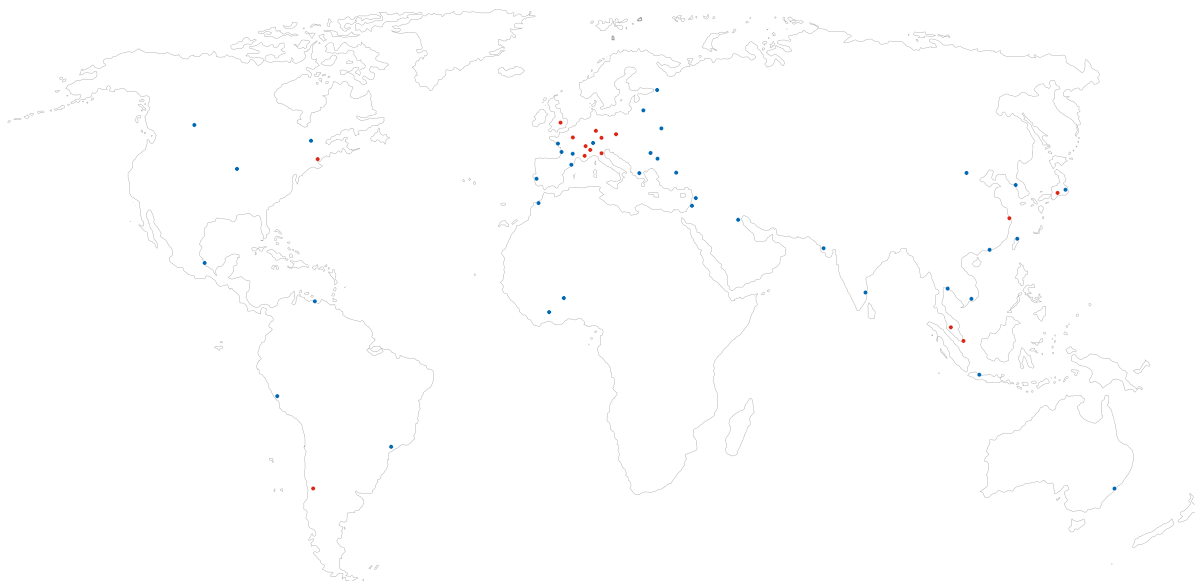


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