

PcVue Highlights

System architecture

- Supported on Windows 2000, XP and Server 2003
- Real time multi-tasking kernel
- Portability of applications from previous versions
- Open architecture
- Drawing, database and user programs using object oriented technology
- Alarm processing
- Archive processing
- Client/server architecture
- Broadcasting variables to all network stations
- Native, optimized redundancy of communication servers
- Bilingual facility for menus and application
- Versions in English, French, German, Italian, Spanish and Russian
- Product structure facilitating integration of the business layer

Development

- Windows ease of use: an intuitive environment for development
- Single, integral development 'studio' for all aspects of the software
- Configuration using dialog boxes
- Wizards to assist configuration
- No compilation required for mimics and programs
- The same mimic may be opened simultaneously in design and run modes
- Graphical object library and animated object libraries
- Multiple undo and redo
- Tool for simulating values of PLC variables
- On line help
- Entire project data contained in one folder and its sub-folders
- Management of multiple object libraries for a project, or shared across projects
- ASCII-formatted configuration files that may be opened by a 3rd party editor (Excel etc.)
- Access kit for variables to let a 3rd party application subscribe to the PcVue database
- Network key as a token to control development rights across the network of supervisory stations
- Integral tool for archiving projects

Distributed applications

- Inter-station messaging using TCP/IP or NetBios (NetBeui etc.)
- Exchanging values of variables in real time: internal, equipment and historical
- Single configuration of the data base for distributed architectures

- Version control function for managing projects, with automatic loading of the latest available version on a server or local station
- Traceability of different versions of a project
- Concentrator station and archive server
- Administration of network users' access rights
- Creation and broadcasting of new variables across the network in run mode
- System variables to indicate the status of network stations and of the connections between them
- Remote access by modem through Microsoft RAS

Communication

- Communication supported to PLCs, controllers, fieldbus I/O and other industrial equipment
- Communication via serial port, Ethernet card, manufacturer-specific board or Applicom board
- Native support of many serial and TCP/IP protocols
- OPC V2.0 data client and server
- Native LonWorks driver
- Compatible with LonWorks Turbo
- Event-driven updating of the database
- Minimum polling interval of once per 50ms
- Polling interval is configurable for each data frame
- Prioritized queue for write frames
- Protocol management with time-stamping at source
- Time-stamping of data with millisecond accuracy
- Sorting of time-stamped data before logging
- Display and recording of the time-stamping origin (equipment or Supervisor)
- Development kit for custom protocols
- Tools for managing data flows and for diagnostics

Database

- Hierarchical variable name structure
- Variable types: bits, registers, texts, and alarms
- Classification by domain and nature
- Associated labels for variables to describe them explicitly in mimics, alarm lists and events
- Recording and saving of internal variable values
- Data structure of extended attributes associated with each variable of the system
- Conversion to physical values
- Deadband

- 4 level threshold detection system plus hysteresis on analog variables
- Discrepancy checking on bit variables
- Expressions and formula calculations
- Chronometer and counter variables
- Changes can be made to the database using Excel or an ASCII editor
- Automatic generation of the database from a 3rd party application (Unity – Schneider Electric, LonDB – LonWorks Technology etc.)

Actions

- Sending recipes and commands according to a daily timetable, managing exception periods for public holidays
- Event-driven actions on changes of bit and alarm values
- Cyclical actions
- Scheduler

Graphical interface

- Graphical interface based on ARC Informatique's FrontVue software
- Microsoft VBA included in the graphical interface
- Object oriented graphical Interface
- Automatic creation of variables by changing an object's context
- Integration and manipulation of ActiveX components by VBA
- Importing images in WMF, EMF, GIF (static and animated), BMP, JPEG and AVI formats
- Design of mimics in 3D
- Support of 3D objects in DirectX format
- Standard animations can be applied to the properties of 3D objects
- Mimics can be re-sized if the display resolution changes
- Incorporating OLE2 objects in mimics (from Microsoft Word, Excel etc.)
- Importing multimedia components
- Vector drawing tool
- Color selection by color picker
- Color palette of up to 16 million colors (depending on system capacity)
- Color gradients for 3D effects
- Blinking and transparent colors
- Invalid status on loss of communication with equipment
- Visual browser to display and change object properties without ungrouping them
- Totally configurable appearance of windows, plus child and parent windows into another
- 16 design layers with locking according to user's access level

PcVue Highlights

- Zoom optionally associated with layers of zoom/design displayed
- Zooming on-the-fly to enlarge an area of a mimic on a separate display
- Object visibility dependent on zoom level
- Over 60 animations including text, color, position, send command and hypertext link
- Use of expressions and substitution characters in animations
- Specific animations for multi-screen applications
- Use of expressions and substitution strings in animations
- Template mimics for consistent look and feel across an application
- Use of memory cache to load the main mimics fast
- Table macro animation: a facility for displaying images in cells, managing cell selection, displaying and modifying database variables
- Ability to associate mimic animations with shortcut keys
- Display of tool-tip text on control zones
- Virtual keypad for use with touch screen
- Automatic adjustment of HMI controls for touch screens
- Context screen on active zones of an application
- Unlimited number of mimics
- Unlimited number of animations per object and per window
- Mimics up to 10,000 x 10,000 pixels in size
- Dynamic switching between languages
- Iconising of mimics
- Mimics can be produced and changed with Excel or an ASCII editor

Alarm management

- Alarms and acknowledgements can be broadcast to all stations
- 30 alarm levels available with 5 alarm states
- Filtering of alarms by state, level, domain, nature etc. - modifiable online
- Filtering the processing of alarms by station
- Alarm summary variables by value, level, domain, nature etc.
- Masking by expression or dependency
- User masking of insignificant alarms with password locking (3 levels of masking)
- Actions / help information associated with each alarm
- Colors associated with alarm values, fully configurable
- Logging of alarms to disk and/or continuous printing

- Automatic acknowledgement sent to the PLC

Event management

- Events broadcast to all stations
- Facility to type comments into event logs
- Formats for historical logging are configurable for easy export to 3rd party software
- Dynamically modifiable filters by domain and nature
- Data export to DBMS via ODBC or ADO link
- Logging of alarm values, user login/logout, program execution, alarm masking, changes to variable states etc.
- Recording of data to one or more archive units
- Recording of data in binary or ASCII formats

Trending

- Generic trends
- Simultaneous display of real time and historical data
- Dynamic configuration of window appearance and behaviour in design and run modes, with optional locking
- 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
- Configurable historical data storage size
- Event-driven recording to minimize use of disk storage
- Data recording onto one or more archiving units
- Data recording in binary or ASCII format
- Data export to DBMS via ODBC link
- Data export to Excel using DataVue software
- Printing of displayed trends on graphical printers

Reports

- Created via the mimic editor
- Data recording and printing on request and by event
- Facility to read reports within mimics using a VCR feature
- Facility to compare reports with a reference condition

Advanced VCR function

- Replay mimics at a different rate to the events associated with a set of variables

- Facility for data recording for several weeks
- Facility to replay data on different network stations
- Replay information event by event to analyze incident sequences

Recipes

- Up to 5000 bit, register and text variables per recipe
- Sending of recipes by event or on request
- Option to create a recipe based on real time values
- Inspection and modification of values before sending
- Management of recipes from a relational DBMS via an ODBC link
- Facility for logging to use a product batch index to ease extraction of historical data by batch number

Access rights

- Unlimited number of users
- Management by group and matrix for maximum flexibility
- Facility for locking access to particular mimics, command variables, log variables, acknowledgements and alarm masking of, access to various levels of model etc.
- Control of reading, creation, changing and sending of recipes
- Configuring different access profiles for a user according to the station logged onto, in a multi-station architecture
- Password validity limited by date
- User able to change password on first usage
- Local rights on the client as standard plus rights for Web-based remote access

Reports and summaries

- Summary generation to export historical data using DataVue developed by ARC Informatique
- 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.
- Extract request built using a graphical editor
- Sampling period from 1 second to several days
- Facility to extract data from PcVue or ODBC archive units
- Automatic running of requests for PcVue to generate summaries, at end of each batch production, change of team, day, week, month etc.

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- Automatic starting of an Excel macro after data extraction for report formatting
- DataVue can be used on a different station from the Supervisor and to access historical data on the local network
- Control of DataVue by a third party application via DDE or OLE

Programming language

- Similar to industry standard BASIC
- Specially created to work within the PcVue system to extend its features
- Advanced functions dedicated to supervision
- Programs take account of the context provided to them (inheritance)
- Modular structure
- Arithmetic and Boolean operators
- Triggering from events
- Access to DLLs
- Access to the real-time database, historical data and alarms
- Control of multimedia peripherals
- SQL support

Surveillance management

- Surveillance management by Alert software from Micromedia
- User management and organizing the surveillance
- Message transmission to fixed and mobile phone, GSM, radio message, beep, fax, teleprinter, email, Minitel and Internet browser
- Facility to acknowledge remote alarms according to the terminal used
- Facility for voice synthesis to generate audio messages
- Interfacing with DDE and 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

DBMS data exchange

- Exchange of data with DBMS via SQL requests
- Bi-directional data exchange to let manufacturing orders be sent to the supervision system and PLCs
- Cyclic or event-based operation
- ODBC / OLE DB interface for data exchange with the most common DBMSs
- Configuration by clicking, no programming required
- Data analysis by software for DBMS reporting

Security devices

- Automatic swapping of data server stations
- Redundancy of the communication network among stations
- Field processes – subscription between clients and servers to minimize switch-over times
- Redundancy of field communication network
- Redundancy of data acquisition stations on single-master communication networks
- Management of network redundancy
- Monitoring of frame, equipment and network condition, using individual status indicators
- Monitoring by the equipment of correct working of the supervisor
- Tool to control event flows at the heart of the system
- Log file of system incidents for diagnostic analysis if failure occurs
- Locking of access to Windows Desktop and option of locking 'Ctrl+Alt+Del'

21 CFR Part 11 functions

- Audit trail
- 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

Internet browser access

- ARC Informatique's WebVue, a light supervisory client accessed through a web browser
- Based on Sun's JAVA technology available on Microsoft Windows, Linux, Unix, Macintosh etc.
- Enables display of real-time data and access to historical data, trends and events
- Facilities for remote commands, logging 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
- Access to PcVue data server via IIS in XMP SOAP
- Station for production maintenance staff, or for all occasional users
- Several users connected simultaneously to the supervisory application managed by the Web server station
- No license required on the client station

Web Services

- Microsoft .Net technologies
- Service descriptions accessible in WSDL language
- XML / SOAP data transport
- Identification and connection sessions
- Access to real time data, historical data and alarm lists

Windows Terminal Server

- Client / server architectures validated on Windows Terminal Server
- Ordinary clients via Microsoft RCP (Win98, NT, CE, XP, common consoles, PDA, etc.)
- Assured redundancy of data acquisition servers