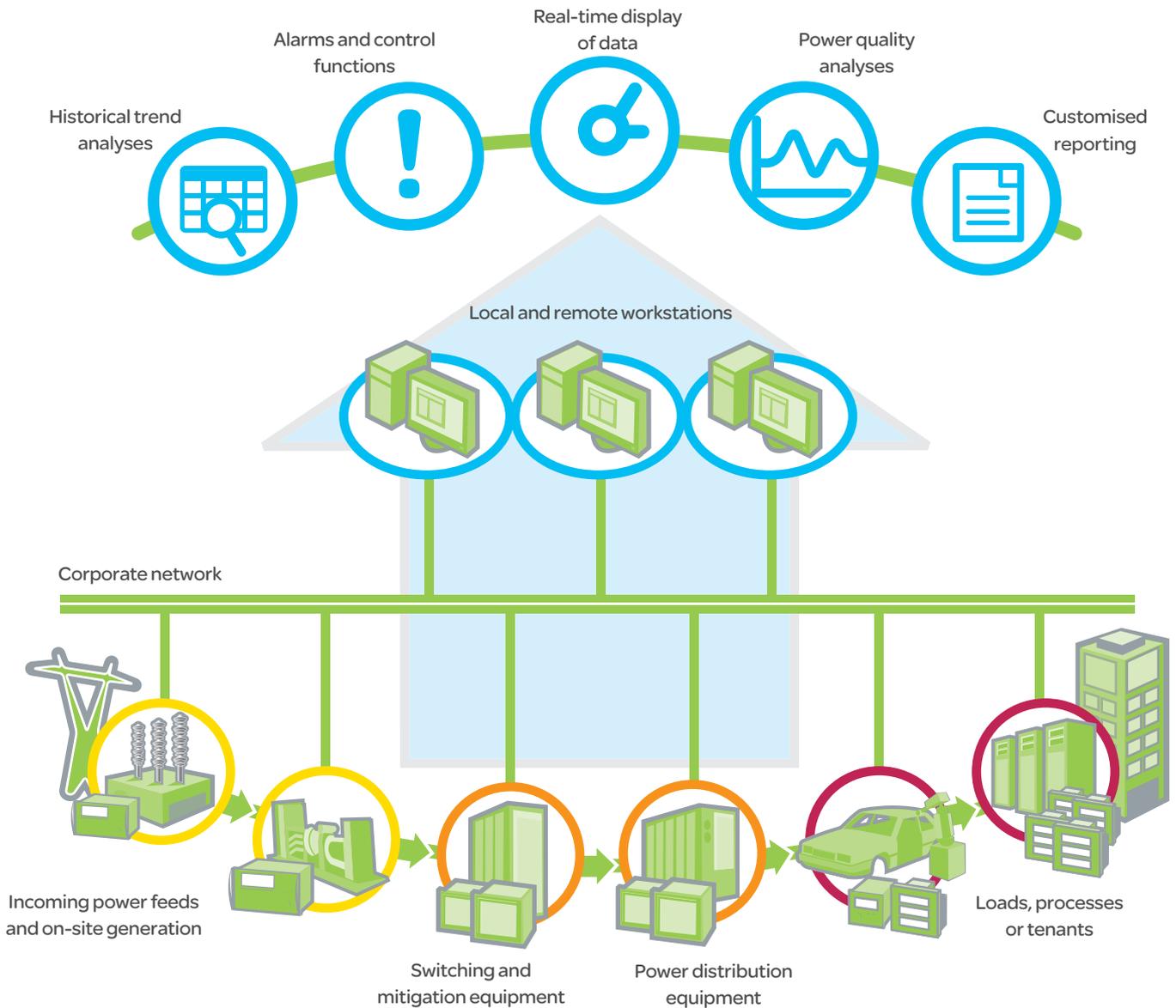


# Gain energy insight and control with PowerLogic™

PowerLogic ION Enterprise  
power management software



# Solution overview



## Manage real-time power conditions and energy efficiency

PowerLogic ION Enterprise is a complete power management solution for energy providers and industrial or commercial operations. It helps engineering and management personnel cut energy-related costs, avoid downtime and optimise equipment utilisation.

The software uses industry-standard network technologies, including Ethernet and wireless, to automatically collect and store data from key electrical distribution points and physical assets. It forms a layer of energy intelligence across your facility, campus, service area or your entire enterprise, acting as a unified interface to electricity and other consumable resources such as water, compressed air, gas and steam. Web-enabled monitoring and reporting gives each user personalised access to timely, relevant information.

PowerLogic ION Enterprise tracks real-time power conditions, analyses power quality and reliability, and responds quickly to alarms to avoid critical situations. It helps you study trends to reveal energy waste or unused capacity as well as verify efficiency improvements and allocate costs to buildings, departments or processes.

The software includes sophisticated load aggregation and arithmetic calculation. Coordinated control capabilities can be used to manage demand or power factor and to manage loads or generators. Customised information is easily and seamlessly shared with all stakeholders and with other business and automation systems.



## Typical applications of PowerLogic ION Enterprise

PowerLogic ION Enterprise is the ideal power management software tool for data centres and other operations with critical power needs, large and small industrial facilities, and commercial buildings of all kinds. It's a solution that provides effective data acquisition, energy savings, avoidance of utility penalties, and overall improved efficiency and productivity.

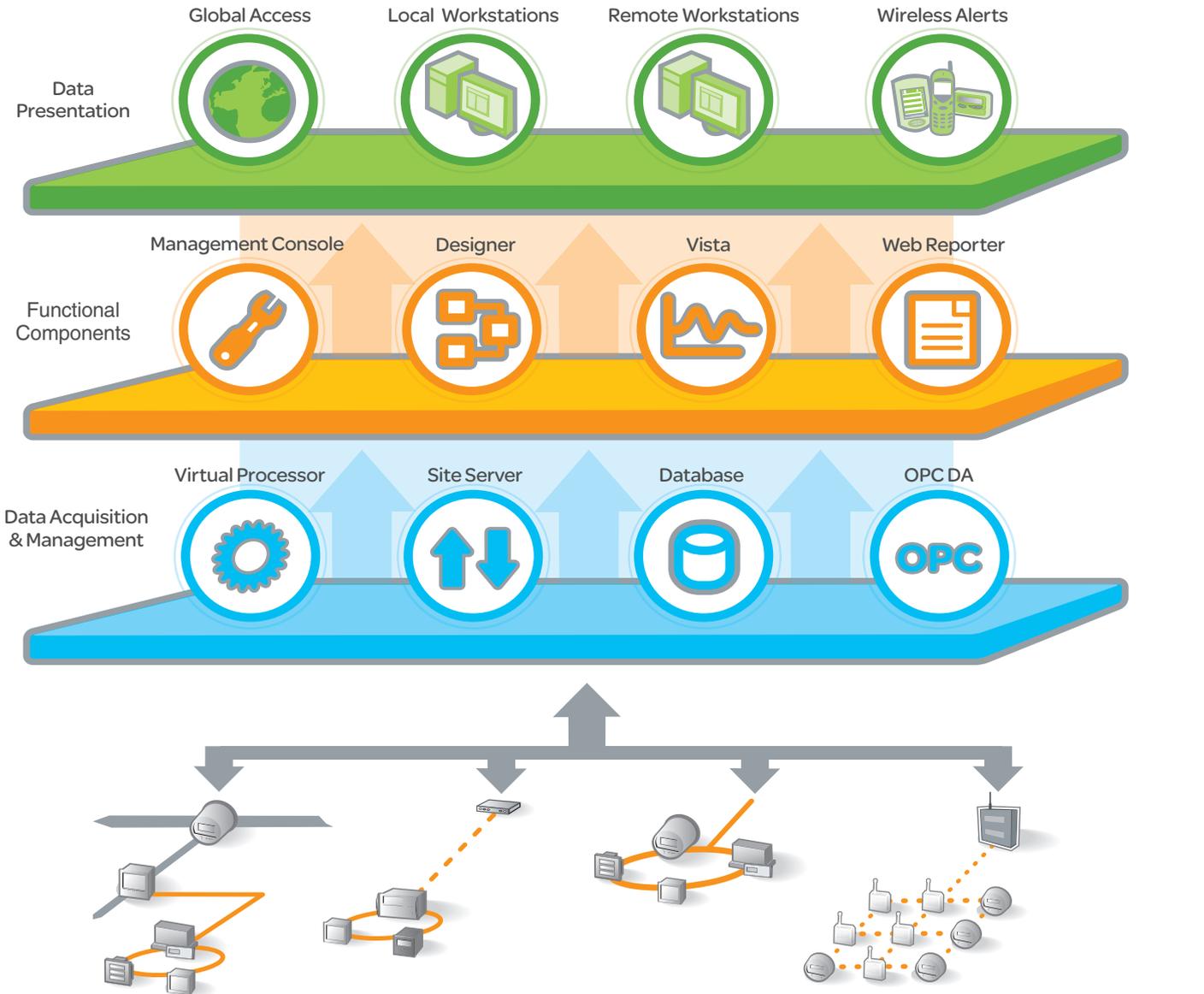
### Applications for critical infrastructure, industry, and buildings

- Energy efficiency and cost**
- Reduce peak demand surcharges
  - Reduce power factor penalties
  - Enable participation in load curtailment programs (e.g. demand response)
- Power availability and reliability**
- Validate that power quality complies with the energy contract
  - Verify the reliable operation of equipment
  - Improve response to power quality-related problems
  - Leverage existing infrastructure capacity and avoid over-building
  - Support proactive maintenance to prolong asset life

### Applications for electric utilities

- Power availability and reliability**
- Improve T&D network reliability
  - Enhance substation automation
  - Maximise the use of existing infrastructure
  - Verify compliance with new power quality standards
  - Analyse and isolate the source of power quality problems
  - Help customers manage reliability using operational and power quality data

# Software architecture



## Data presentation

- Enterprise-wide, multi-user data and control access through local server interface, thin-client web browser, or terminal services; tiered security
- Information and alerts via mobile phone, PDA and other devices



## Functional components (on main server or workstations)

- **Management Console** – configure your PowerLogic ION Enterprise network, including communication paths, devices and logical groups.
- **Designer** – customise the modular functionality of ION devices and Virtual Processors (see below)
- **Vista** – real-time displays of measurements and status indicators, power quality analysis, historical trending, alarms and manual control
- **Web Reporter** – predefined or custom reports; support for third-party reporting tools

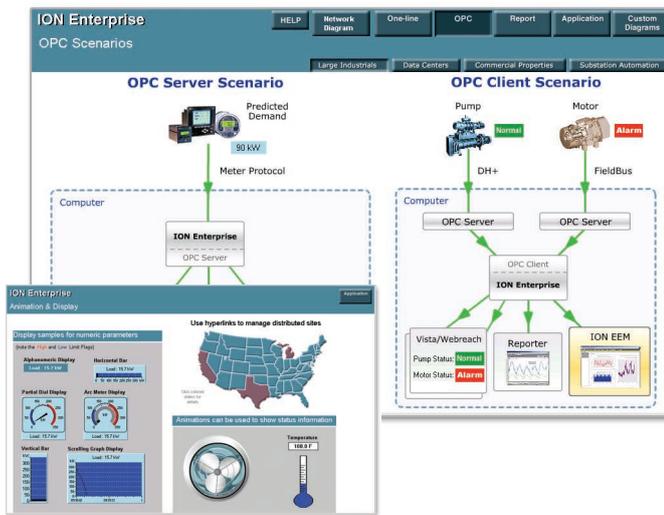


## Data acquisition and management

- **Virtual Processor** - multi-site aggregation, coordinated control, complex calculations and alarming, logging for non-recording devices (e.g. interval kWh)
- **Site Server** - continuous or scheduled retrieval of data from up to hundreds of remote devices over Internet, Ethernet, telephone, serial, wireless, or satellite connections
- **SQL ODBC**-compliant databases - Microsoft SQL Server 2005 (with support of SQL Server 2000). Log device data, system data and events with accurate meter synchronisation ( $\pm 16$  ms or  $\pm 1$  ms using GPS) for precise event timestamping, power quality analysis and revenue billing; data is securely accessible using industry-standard database tools; add distributed databases and servers as required for load balancing
- **OPC DA Client** (standard), **OPC DA Server** (optional) and **PQDIF Exporter** (optional) – supports data import/export with compliant devices and systems

# Data acquisition and integration

- Integrate metering of WAGES (water, air, gas, electricity, steam)
- Provide standard product native support for PowerLogic ION series, PM800 series, PM700 series, PM210, CM3000 series, CM4000 series and legacy ACM series power and energy meters
- Access all real-time and logged data, control on-board relays and digital outputs, remote configuration and firmware upgrading
- Support data access from the CM2000 Series, PM600 Series, PM9C, PM500, MCM, Model 98 Transformer Temperature Controller, Enercept Meter, Energy Meter, and BCM42
- Easily add support for third-party meters, transducers, PLCs, RTUs and power distribution or mitigation equipment
- Quickly add and configure remote device communication over Modbus RTU or Modbus TCP protocols
- Use MeterM@il to securely access meter data via Internet within firewall restrictions
- Add devices and user clients to the scalable platform as needs grow
- Integrate other energy management or automation systems (e.g. SCADA, BAC, DCS, ERP) through ODBC, XML, OPC, email, FTP, CSV and PQDIF compliance; integrate web services via XML



## Scalable, flexible architecture

- Grow to hundreds of metering points
- Add distributed servers and clients
- Use modular programming for complex processing and control
- Integrate legacy and third-party devices
- Leverage and optimise existing infrastructure

## Real-time monitoring

- Collect system-wide data
- Perform calculations, display and log derived data
- Customise views of data – digital figures, dials, bar or trend graphs, one-line diagrams, etc.
- Communicate over Internet, Ethernet, wireless

## Interoperability

- Integrate all energy management and automation systems
- Share data with third-party SCADA, automation, and accounting systems
- Comply with ODBC, OPC, and PQDIF standards





## Reporting

The powerful, intuitive Web Reporter module lets users see critical information exactly how, where, and when they need it.

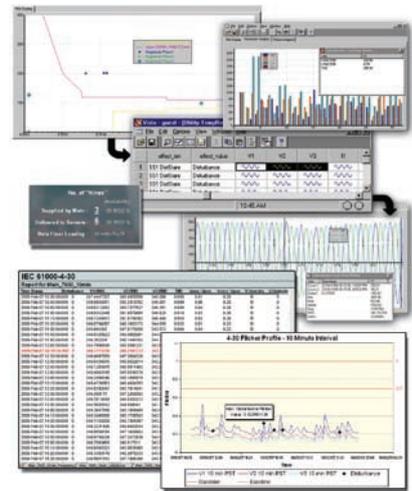
- Preconfigured or fully customised
- Supports third-party reporting tools and export data to MS Excel
- Manual, scheduled, or alarm/event-triggered distribution via email or web
- Combine databases to reveal true business conditions
- Reports accessible via a Web browser
- Support WAGES (Water, Air, Gas, Electrical, & Steam) measurements
- Per user security model (View, Edit, Create, and Delete)
- Can be generated in PDF format
- Can export data in XML format
- Support remote report development and uploading

### Includes:

- Energy Period over Period Comparison (Compare energy consumption of different periods)
- Energy by Shift Report (Compare energy over different user-defined shifts)
- Trending Report (Trend multiple measurements for one device or one measurement for multiple devices over time)
- Tabular Report (Show logged measurements and associated time in a raw tabular format)
- Alarm & Event Report (Show events/alarms from specific devices based on priority level)
- System Configuration Report (a quick system inventory – Device Name, Group, Connection, and Device Address)
- 100 Millisecond Report (Show Power Quality millisecond time-stamped data from devices supporting millisecond logging of PQ measurements)
- IEC61000-4-30 and EN50160 Power Quality reports
- Energy cost Report (associate rates with TOU schedule to generate total cost data)

## Trends and analysis

- Trend any parameter to reveal demand peaks and track system-wide energy costs
- Graph any combination of measured parameters
- Aggregate loads
- Identify dangerous trends and redistribute loads
- Optimise network capacity, avoid over-building
- Avoid peak demand surcharges and power factor penalties



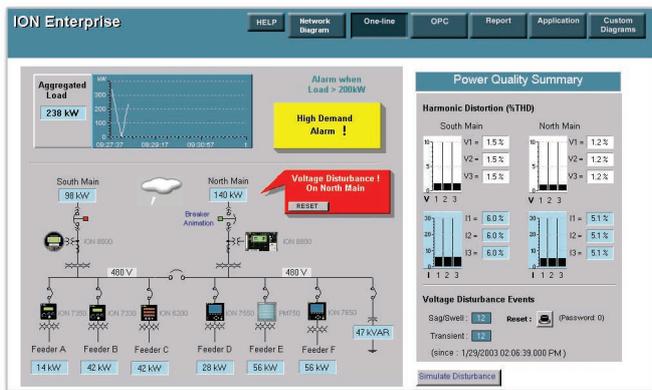
## Power quality analysis

- Monitor events and waveform plotting system-wide
- Monitor harmonics, K-factor, crest factor, symmetrical components
- Diagnose and isolate PQ problems to increase reliability
- Benchmark performance and compare service areas
- Track contracted service compliance



## Web portal

- Allow multi-user access
- Use multi-level security checks



## Alarms and events

- Trigger on complex conditions
- Generate & distribute alarm notifications
- Log all relevant data sequence of events for diagnosis
- Flag and avert potential problems
- Alert key personnel 24/7
- Optimise maintenance scheduling



## Manual and automated control

- Perform manual or setpoint-triggered functions
- Coordinate control of multiple loads, generators, relays, etc.
- Support energy-saving applications
- Manage distributed energy assets
- Automate substations & reduce service time

Features	Standard	Optional
Automated data acquisition from sites/ devices	■	
SQL 2005 Express Edition database	■	
SQL 2005 Standard Edition database		■
Web-enabled real-time monitoring	■	
Web-enabled reporting	■	
Trend analysis	■	
Power quality analysis, compliance reporting	■	
Alarms and events	■	
Manual and automated control	■	
OPC DA client	■	
OPC DA server		■
PQDIF data export		■

Supported devices	
<b>PowerLogic power and energy meters:</b>	<b>Power Measurement legacy power and energy meters:</b>
ION8800	ION8300/8400/8500
ION8600	ION7700
ION7550/7650 series	ION7500/7600 series
PM800 series	ACM3720
ION7300 series	ACM3710
PM710, PM750	ACM3300
ION6200	
PM210	
CM3250, CM3350	<b>Protective relays:</b>
CM4000, CM4250, CM4000	Sepam series 10, 20, 40, 80
BCPM	
<b>Circuit breaker control units:</b>	<b>Other:</b>
Micrologic, Type A, P and H	Modbus-compatible devices
Compact NSX Type A, Type E	Other devices through OPC

## Enhance your PowerLogic solution

Support or expand your PowerLogic solution with matched accessories and complementary products or systems. Integrate with other Schneider Electric products or with third-party products through industry-standard protocols.

### PowerLogic EGX Ethernet gateways

Access devices on downstream serial networks through fast *Transparent Ready™* Ethernet communications featuring customised web pages.

### PowerLogic ION7550, RTU option

Remote terminal unit for transducer and equipment monitoring.

### T1 current transformers

Ratio of Ip/5 for use with measurement devices, relays, etc.

### Sepam™ protective relays

Monitoring, protection and control of substations, busbars, transformers, motors, generators and capacitors.

### Masterpact™ and Compact™ breakers

Equipped with Micrologic control units, offering protection for LV networks.

### Modicon™ programmable logic controllers

Small-scale distributed control to robust, powerful stand-alone PLCs.

### Altivar™ variable frequency drives

Match motor output to required loads to reduce energy consumption and extend motor life.

### Tesys™ motor controllers

Motor branch short-circuit protection, manual disconnect, remote power circuit switching and thermal overload protection.

### Talus™ substation control units

Telecontrol, remote monitoring and automatic control of MV substations.

### Power factor correction and harmonic filtering solutions

Varplus<sup>2</sup>™ capacitors, Varlogic™ controllers, detuned reactors, Varpact™ modules, Varset™ cubicles, Accusine™ filters and much more.

### PowerLogic ME series panel meters

Class 1 accuracy kilowatt-hour panel meters for stand-alone applications.

## Services

Our extensive engineering and support services ensure you leverage the full capabilities of your PowerLogic solution and benefit from a low total cost of ownership. Our experts can help with system selection, project management, integration, custom reporting, documentation and training to meet your organisation's unique needs.

Please contact your local sales representative for ordering information.

Visit [www.powerlogic.com](http://www.powerlogic.com) for more information on other PowerLogic products, applications and system solutions.

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