Enterprise Pipeline Management System — ePLMS
The smart connected pipeline
Amid increasing demand, environmental pressures, and potential security threats, the primary concern of hydrocarbon pipeline operators remains the same: to ensure safe, reliable, and compliant operations, 24/7 — all while managing cost-efficient transportation and minimizing operational risk.

The Schneider Electric™ Enterprise Pipeline Management System (ePLMS), together with Cisco, features a highly secure architecture using the IoT to integrate converged telecommunications with the midstream span of equipment control, pipeline operations, and enterprise information management mandatory for today’s operators.

The solution lessens deployment risk, speeds installation, improves operational efficiencies and total cost of ownership (TCO), and helps resolve critical network issues quickly.

IoT connects the unconnected
- 50 billion “smart objects” by 2020
- Rapid adoption rate of digital infrastructure
- 5 times faster than electricity or telephony

An end-to-end Internet-of-Things (IoT) solution for pipeline management and automation, based on industry best practices for network, security, and IT architectures, resulting in cost savings and optimized operations.
IoT maximizes design, operations, and maintenance.

Best design and reduced implementation cost and risk
Reference design based on industry best practices provides future-ready communication, IT, and automation architecture for integrated and automated operations.

Reduced risk, and safer, secure, more reliable operations
High availability of the systems and accurate, timely data improve response to abnormal operations.

Lower TCO
Secure and reliable architecture based on open standards and converged IT/OT solution for communications, networks, and IT infrastructure solution.

Increased business and operations efficiency; higher revenue
IoT uses open standards and centralized data management to seamlessly integrate and operate with other pipeline operations systems. The solution integrates other software applications for simulation, forecasting and planning, measurement, and asset management, maximizing the collected data.

Scalability
Start with a complete solution or modular segments. Your best-in-class system can grow and evolve with the pipeline network, with minimal deployment and integration risk — and assured life cycle support.

Solution highlights
• An end-to-end smart connected solution based on industry best practices for pipeline infrastructures and network architectures
• A flexible, modular approach — from assessment, design, and test to deploy, install, and support
• Collaborative expertise and service from the leaders in SCADA, network connectivity and security, reducing costs, and optimizing operations

Converging operational and informational technologies delivers control over open standards.
Enabling IT/OT convergence in pipeline operations.

Pipeline integrity, safety, security, and reliability are essential elements that help operators meet demanding delivery schedules and optimize operational costs. These challenges can be addressed through a secure communications strategy to ensure operators can easily access remote data, video, and collaboration solutions for safety and security in addition to operations.

IoT at a glance.

Improving pipeline operational reliability and safety.

IoT enables:
• A networking solution to support secure access from the SCADA system to the whole pipeline network
• A data center approach to allow users to access the system from multiple locations
• DMZ access to allow nonoperational users to view information via public Internet

Solution highlights:
• Operational intelligence
  – Asset management/GIS/analytics
  – Energy monitoring and sustainability
• Supervisory control BLISS (Base Line Integrated SCADA System)
  – ePLMS with Cisco unified computing platform
• Converged telecommunications from Cisco
  – Cisco networking, firewalls, and telecom infrastructure
• Field monitoring and automation
  – Process automation (PAC, PLC, RTU, DCS) and safety systems

People benefit:
Enhanced safety, reliability and efficiency with:
• A working, secure, real network and telecom infrastructure including switches, hubs, firewalls, and Wi-Fi for host-to-field communications
• Data center architecture

We are the only company that provides an integrated software platform within our architecture that enables safe, reliable, and efficient operations from the field to the enterprise.
The smart connected pipeline architecture.

Schneider Electric and Cisco bring their combined expertise in industrial IT hardware and software to provide a validated reference architecture for pipeline control rooms to deliver maximum reliability, scalability and security with optimized design choices — by integrating SCADA service with unified compute and network management.
End-to-end solution

The BLISS control room provides fast, secure, and efficient deployment. It reduces design and engineering costs while increasing operational efficiency and lowering TCO. The control room solution includes IP networking, wireless, and optical communications as well as industrial cybersecurity (ISA SP99) high availability designs, and virtualization and convergence architectures.

BLISS can be deployed into a single appliance that includes unified computing, storage, racks, and the ePLMS software suite loaded and pretested.

The solution automates operations end-to-end, from block valve to control rooms. It includes a validated and tested architecture and integrated industrial cybersecurity systems that provide ease of management and support, improved reliability, and reduced engineering costs.

The solution includes SCADA and advanced applications such as simulation, leak detection, process, and energy automation.

80% of the largest pipeline operators in the world have placed their trust in Schneider Electric.

Enterprise information management

- Flow measurement and validation applications: Applications integrated with the SCADA to support the business and financial processes that depend on data generated during commodity transport.

Supervisory control

- Leak detection: Software-based leak detection using multiple computational pipeline methodologies including high fidelity hydraulic model method for early detection of leaks (time, volume, and location).
- Operator training: Highly realistic training environments that deliver a training experience that parallels operations.
- Pipeline operations management: Metering, isolating, tanking, inventories, storage pool volumes, compressor performance, gas daily demand, and supply planning.

Field monitoring and automation

- Process and safety systems: Scalable process control platform, with hot-standby features, SIL-rated safety system, and configuration and diagnostics tools for field instrumentation.
- Physical safety and security: Security provided through CCTV and access control systems with video analytics for surveillance and visual verification that can be integrated.
- Block valve station monitoring: Safety shutdown system and metering points, with a broad range of RTUs, EFM, and instrumentation; it collects custody transfer and gas quality information.
- Energy management: Control and protect the electrical network for reliability and uptime of power supply grid.

Converged telecommunications

- High-availability and reliability: Backup WAN services to ensure operation services continuity.
- Transport multiple traffic types across common infrastructure: Differentiated quality of service between traffic types, ensuring performance requirements of all operational traffic and multiservice traffic.
- Open standards-based security: Multilevel security to protect against cyberattacks and nonintentional security threats, Centralized configurable policy-based services.

Multiservice applications

- Optional services to support pipeline operations including VoIP, local Wi-Fi access, mobility, collaboration tools, and Internet access.

Management

- End-to-end communications network, security, and administration management: from instrumentation and sensors to the control center applications.

Ruggedization

- Ruggedized equipment available for harsh conditions, local legislation requirements, or industry certifications.

Enterprise information management

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