

From Islands of Automation to Coordinated Operations

The Ovation™ Automation Platform:
Managing the Modern Data Center as One Connected System

OVATION™

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Table of Contents

2 **AI Scale is Redefining Facility Operations**
Why facility operations must adapt to rising scale and power density.

3 **The Challenge: Islands of Automation**
Why disconnected facility systems create operational complexity.

4 **The Solution: Unified, Orchestrated Facility Management**
How the Ovation Automation Platform can serve as a facility-level automation and control layer.

5 **Power Management & Electrical Infrastructure**
Coordinating onsite generation, electrical distribution, UPS, BESS and grid interaction.

6 **Cooling & Facility Systems**
Bringing greater visibility and coordination to critical cooling and building infrastructures.

7 **Industrial-Grade Reliability, Cybersecure Scalability**
Applying proven industrial automation capabilities to large-scale data center infrastructures.

AI Scale Is Redefining Facility Operations

Driving demand for scalable, reliable automation.

Hyperscale data centers are undergoing a major design shift to accommodate growing power, cooling and networking requirements. What is not changing is the imperative of continuous, resilient and reliable facility operations.

As facilities become operational, operators are challenged with managing a complex mix of critical infrastructure, each with its own control system, interfaces and data streams.



The challenge is no longer simply operating each asset effectively.

- Utility and grid connections
- Onsite power generation
- UPS systems and electrical distribution
- Battery energy storage systems
- Switchgear and power quality
- Cooling and water systems
- Building management systems
- Backup and emergency power

It's efficiently coordinating the entire facility as one interconnected system.

That's where Emerson and its Ovation™ Automation Platform brings decades of proven power and water automation expertise to modern data centers.

The Challenge: Disconnected Islands of Automation

Disconnected systems create operational complexity.

Operating independent, disconnected systems can create **gaps in operational visibility and coordination** across the data center facility.

When teams have to navigate multiple interfaces and data sources, **routine tasks take longer,** and detecting and responding to abnormal events becomes more challenging.

As computing capacity expands, **operational silos can increase workloads,** complicate maintenance and make it more difficult to maintain a consistent view of overall facility performance.



When systems remain isolated, operators can face challenges such as:

- Fragmented visibility across facility operations
- Multiple alarm environments
- Separate data and historian sources
- More complex coordination during abnormal conditions
- Manual dependencies between systems
- Increasing complexity as capacity expands
- Difficulty sequencing equipment across systems
- Coordinated cybersecurity programs

Operators don't just need more data or individual asset control systems.
They need a unified platform that transforms information into actionable intelligence and coordinated operational decisions.

The Solution: Orchestrated Infrastructure Automation

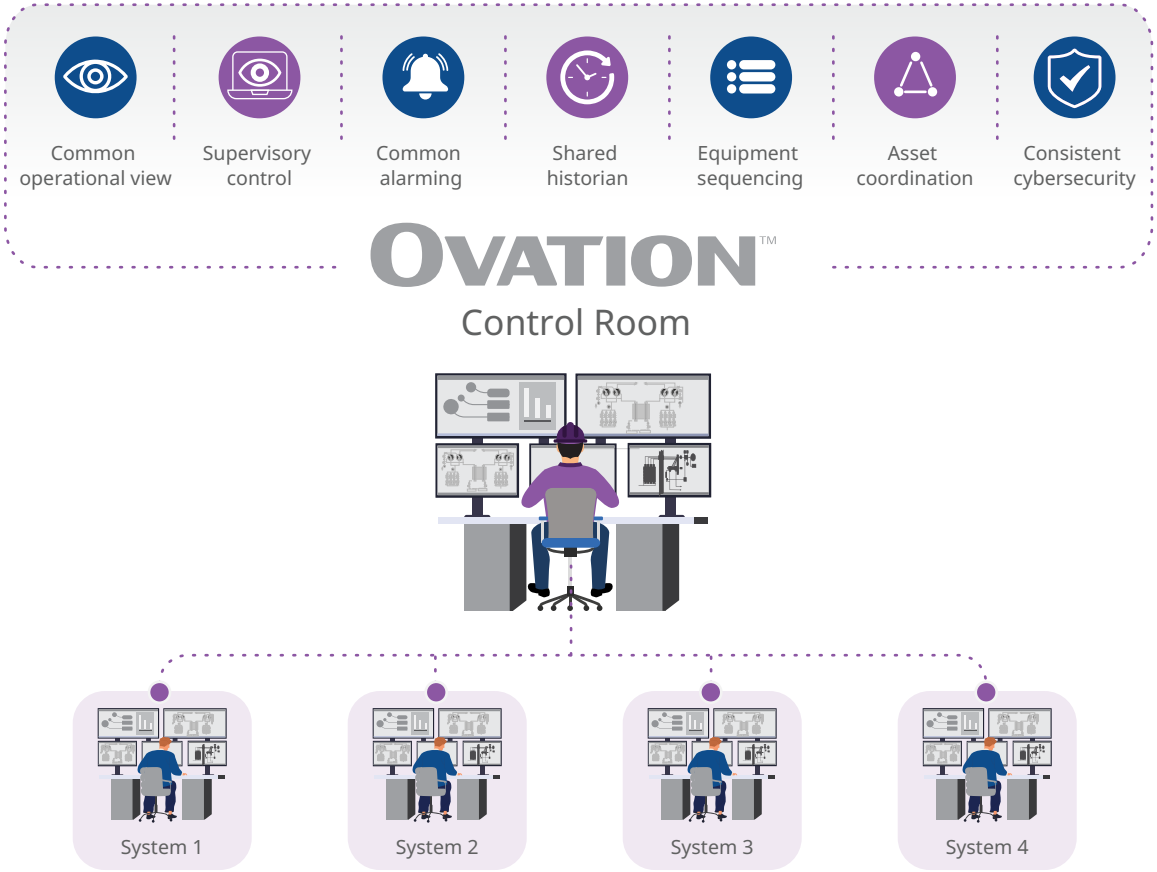
Orchestrated view. Connected data. Informed decisions.

Emerson's Ovation Automation Platform provides a common automation layer across critical data center infrastructure, helping operators transform individual islands of automation into a unified facility operation.

By connecting critical infrastructure systems, the Ovation Automation Platform coordinates operations across the facility through standardized workflows, automated sequences, and integrated control strategies that scale with evolving infrastructure needs.

Operators gain centralized visibility, supervisory control, and greater confidence that interconnected systems will respond consistently and predictably under changing conditions.

Rather than forcing teams to interpret information from multiple control systems, alarm environments, and data sources, the Ovation platform establishes a common operating framework that simplifies operations, reduces manual intervention, and helps improve facility reliability.



The result is **greater operational awareness, faster decision-making, and more effective management** of increasingly complex data center infrastructure.

Power Management & Electrical Infrastructure

Coordinate power from source to critical load.

Every megawatt matters in an AI-driven data center, making electrical infrastructure more business-critical than ever.

From utility interconnections, switchgear and behind-the-meter generation to battery systems and backup generators, operators need more than visibility into individual assets. They need the ability to coordinate power generation, distribution, and consumption as a unified operation.

Leveraging decades of proven mission-critical power experience and thousands of global installations, Emerson's Ovation Automation Platform unifies monitoring, control, and automation across electrical infrastructure, enabling coordinated bus operations, automated power management, and fast load-shedding responses that help maintain continuity under changing conditions.

For facilities incorporating microgrids, renewable generation, or battery energy storage, the Ovation platform helps orchestrate available energy resources with facility demand while maintaining power quality, operational stability, and resilience.



The Result:
Greater confidence that power is delivered where and when it's needed, while supporting reliable, resilient operations across the facility.

Cooling and Building Management Systems

Power and cooling cannot be managed in isolation.

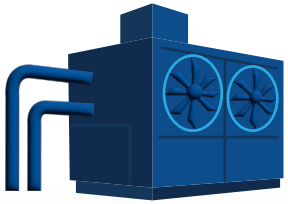
A broad, coordinated operational view can help teams understand relationships between:



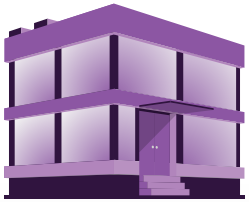
Compute demand



Power demand



Cooling demand



Facility response

As compute density rises, cooling systems become one of the largest consumers of facility power and a critical factor in overall system reliability. Every megawatt delivered to IT equipment creates thermal loads that must be managed across interconnected electrical, cooling, and water systems.

Built on decades of power and water automation expertise, the Ovation Automation Platform provides a common operational environment for the systems that deliver power, remove heat, and support facility availability.

Beyond aggregating operational data, the Ovation platform helps optimize cooling performance through advanced control strategies, cooling unit optimization, and predictive diagnostics. Integrated condition monitoring and vibration analysis help identify equipment degradation early, enabling operators to reduce unplanned downtime, optimize cooling efficiency, and maintain reliable facility performance as thermal demands increase.

The key to reliable AI infrastructure is not optimizing power and cooling independently. It's managing them as one interconnected system.

Industrial-Grade Reliability, Cybersecure Scalability

Bringing the pieces together is only the beginning.

Data center infrastructure continues to evolve as operators scale capacity, integrate new power sources, adopt advanced cooling technologies, and prepare for AI-driven operations.

Reliable data center operations require more than a control platform. They require deep domain expertise, proven execution, and technologies designed to evolve with the facility.

Designed for long asset lifecycles and continuous innovation, the Ovation Automation Platform combines proven industrial automation with modern digital technologies.

Emerson Goes Beyond Just Connecting Equipment
Our Proven, Low-Risk Solutions Help Optimize Full Data Center Complex Operations



AI-Enabled Operations
AI assistants and agents help transform operational data into actionable insights, accelerating troubleshooting and decision-making.



Predictive Maintenance
Turn operational and condition-monitoring data into early warning indicators that help prevent costly failures and unplanned downtime.



Digital Twin Simulation
Test operating strategies, train personnel, and validate changes in a safe virtual environment before deployment.



Software-Defined Architecture
Reduce hardware dependencies while simplifying upgrades, maintenance, and future expansion.



Cybersecurity
Protect critical infrastructure through secure architectures, cybersecurity services, and continuous risk management.



Project Execution & Quality
Global project delivery expertise and rigorous quality processes help bring complex facilities online faster and with less risk.



Open and Secure Integration
The Ovation Automation Platform supports industry-standard protocols for integration across data center systems and third-party equipment. Supported protocols include BACnet, MQTT, Modbus TCP/IP, Modbus RS-485, IEC 61850, IEC 60870-5-104, IEC 60870-5-101, and others.



Expert Service & Lifecycle Support
Dedicated automation, power, water, and reliability specialists help optimize performance and support ongoing operations.

Connect Your Data Center Operations by Connecting with an Emerson Expert Today.

Learn how the integrated Ovation Automation Platform and Emerson's decades of industrial expertise can help optimize your data center operations.



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