MITSUBISHI ELECTRIC
Changes for the Better

Automating the World

DATA CENTER INFRASTRUCTURE MANAGEMENT

With Mitsubishi Electric Iconics Digital Solutions

- **Optimize operations with real-time visibility and control**
- **Maximize asset reliability and improve maintenance practices**
- **Enhance energy efficiency to reduce costs and environmental impact**
- **Advance sustainability initiatives with intelligent resource management**
- **Adapt to evolving customer demands with flexible, data-driven solutions**

KEY CHALLENGES IN INFRASTRUCTURE MANAGEMENT

In today's rapidly evolving digital landscape, data center operators face increasing challenges in managing complex critical infrastructure often referred to as "gray space." Mitsubishi Electric Iconics Digital Solutions provides advanced Data Center Infrastructure Management (DCIM) capabilities with our GENESIS software platform, empowering operators to address their most complex challenges.

Managing data center infrastructure is increasingly complex due to two key challenge areas:

1. ADVANCEMENT OF IT EQUIPMENT AND DIVERSE INFRASTRUCTURE

In a recent global Uptime Institute survey of IT and data center managers[1], over 70% of respondents reported an increase in rack density over the past three years. In addition to housing more assets in increasingly limited space, new IT hardware and software introduce workloads with greater power and cooling demands—often exceeding the facility's original design. Furthermore, data centers operate with a heterogeneous install base of gray space—critical systems sourced from multiple suppliers—making management and holistic data accessibility more complex.

2. RAPID EVOLUTION OF THE BUSINESS ENVIRONMENT

Customers are demanding greater transparency into the environments housing their equipment in colocation data centers, along with deeper insights into the energy consumption tied to their workloads and services. While most organizations track energy-related metrics, in the recent Uptime survey[2] fewer than 50% of respondents reported collecting data on water usage and carbon emissions. Evolving expectations, coupled with increasingly complex Service Level Agreements (SLAs) and demanding regulations, are driving operators to seek more granular, real-time, and historical data from critical infrastructure.

GENESIS

To overcome these challenges while ensuring adaptability for future infrastructure changes, data center operators need flexible, scalable tools that can integrate with a diverse range of systems and enable progressively higher levels of operating maturity.

[1,2] Source: Uptime Institute Global Data Center Survey 2024

INFRASTRUCTURE MANAGEMENT MATURITY

To achieve greater operational efficiency, data centers must advance to a higher level of infrastructure management maturity. As outlined in the table below, this progression depends on three foundational capabilities: asset connectivity, data accessibility, and visualization.

Data Center Infrastructure Management Maturity

Level	Description	Operating Efficiency
Level 5	AI-driven integrated management software adjusts data center behavior and makes the best use of resources according to goals, rules and service requirements throughout its life cycle.	High
Level 4	Machine learning models are used for prediction, service management, and multiple views, optimizing the data center in near real time. AI is applied to DCIM-based data lakes for advanced analytics.	Medium
Level 3	Software can track physical data center equipment characteristics, location and operational status. Energy and environmental data are used to reduce risks and waste.	Medium
Level 2	Software is installed to monitor environmental and equipment power use. Able to adjust basic controls (e.g., cooling) in line with demand.	Low
Level 1	No integration of infrastructure data. Basic monitoring is provided by the equipment vendor software and the BMS.	Low

Source: Data center management software is evolving – at last, Uptime Intelligence, December 2023. Reproduced with permission, 2025.

To date, the level of management maturity in many data center facilities remains quite low. For example, many existing facilities still:

- Use spreadsheets to manage operations, leading to inefficiencies and manual errors
- Rely on multiple disparate systems for monitoring individual assets, resulting in fragmented oversight
- Have limited supervisory control over critical infrastructure, making real-time management challenging

These facilities also lack:

- Comprehensive visualization to provide a holistic view of infrastructure performance
- Real-time and historical data access for informed decision-making and trend analysis
- Consistent alerting and notifications to enable proactive issue resolution

Regardless of whether an organization is building a new data center, modernizing an existing facility, or driving continuous improvement, operators need infrastructure management software that meets their current maturity level, supports progression to higher levels, and remains adaptable to future facility changes.

INFRASTRUCTURE MANAGEMENT FOR TODAY *AND* TOMORROW

GENESIS tackles critical infrastructure management challenges and meets operators at their current level of maturity by providing extensive connectivity to physical assets and systems, common data modeling, and holistic, single-pane-of-glass visualization. It also functions as an information broker to integrate with disparate systems to enable the following outcomes:

ENERGY OPTIMIZATION & SUSTAINABILITY

Improve energy efficiency, consumption accuracy, and enable sustainability initiatives across data center operations.

MAINTENANCE OPTIMIZATION & ASSET RELIABILITY

Extend the lifespan of critical infrastructure assets and optimize maintenance practices.

EVENT RESPONSE & FAILURE PREVENTION

Receive critical notifications promptly to reduce response times, proactively prevent failures, and ensure uninterrupted service.

BUSINESS OPERATION & WORKFLOW STREAMLINING

Improve workflows involving enterprise systems to streamline work order creation, service ticket management, and energy consumption reporting.

GENESIS is a secure, scalable, and flexible software platform that can be deployed in a variety of architectures to provide infrastructure management utilizing the following capabilities and key features:

UNIVERSAL CONNECTIVITY

GENESIS provides connectivity to existing Operational Technology (OT), Information Technology (IT), Building Management Systems (BMS), and Internet-of-Things (IoT) devices through extensive support of industry standard interfaces and protocols.

ALARM MANAGEMENT

GENESIS features a powerful alarm engine that delivers real-time and historical alarm information, and notifies users through email, voice, and SMS messaging with configurable escalation rules.

FAULT DETECTION & DIAGNOSTICS (FDD)

GENESIS includes an FDD engine that analyzes real-time data to detect and predict faults in typical HVAC equipment using a library containing hundreds of rules that can be modified and expanded.

REAL-TIME VISUALIZATION

GENESIS provides a comprehensive and consistent user interface for visualizing and monitoring critical infrastructure with high performance graphics and dashboards coupled with intuitive navigation and accessibility through a web browser.

DATA HISTORIAN

GENESIS includes a time-series optimized data collection and storage service with the ability to efficiently aggregate and serve large amounts of data for visualization, reporting, and integration with existing enterprise data strategies such as a data warehouse or data lake.

DATA MODELING

GENESIS enables common asset modeling for critical equipment with naming and organizational flexibility to align with industry standards or customer preferences for ontology.

ENERGY ANALYTICS

GENESIS integrates data from energy meters to collect, aggregate, visualize, and deliver consumption information based on time range, equipment groupings, and other user definable criteria.

ACCESS & SECURITY

GENESIS supports contemporary authentication protocols, integrates with OpenID Connect (OIDC) providers, includes secure by default installation options, and offers an extensive set of project-level configurable security options.

Quality and security are top priorities for data center operators when selecting infrastructure management tools. MEIDS demonstrates its commitment to both through our ISO 9001 and IEC 62443 Part 4-1 certifications.

(Please refer to the security page of our website for the latest updates on a wide range of security related topics.)

CLOUD EUROPE S.R.L. CASE STUDY

COMPANY OVERVIEW

Based in Rome, Italy, Cloud Europe S.r.l. specializes in designing and managing data centers with a strong emphasis on security and service continuity. The company constructs, hosts, and oversees modular infrastructures for both private and public sector clients, particularly targeting organizations in the financial and insurance sectors that prioritize strategic business continuity.

CHALLENGE

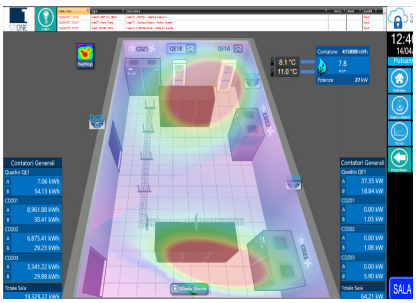
To uphold its commitment to delivering business continuity equal to or exceeding 99.995% uptime per year, Cloud Europe required a robust solution capable of monitoring and managing its data center's energy and environmental resources effectively.

Cloud Europe Data Center

SOLUTION

Cloud Europe implemented GENESIS, which enabled real-time visualization, monitoring, and control of data center operations, addressing challenges such as:

- **Data Integration**
  Collecting over 6,000 energy and environmental data points using various communication protocols (Modbus TCP, SNMP, OPC, RESTful Web APIs, and RTSP/ONVIF)
- **System Monitoring**
  Overseeing the status of more than 4,000 electrical switches, uninterruptible power supplies (UPS), generators, and 60 air conditioning units
- **Security Management**
  Centralizing fire prevention, intrusion detection, and video surveillance systems



Thermal Map of One of the Server Rooms

BENEFITS

The deployment of GENESIS led to significant improvements:

- **Enhanced Efficiency**
  Optimizes energy consumption and extends equipment lifespan through detailed data analysis and visualization
- **Proactive Maintenance**
  Enables operational staff to prevent failures and resolve issues swiftly, ensuring uninterrupted service
- **Increased Reliability**
  Strengthens customer trust by minimizing failure incidences and enhancing overall system reliability

"The GENESIS system has allowed us to minimize failure incidences and optimize energy consumption. It has also strengthened the trust and confidence our customers have in our company."

Giulio Iucci,
CEO of Cloud Europe

IMPROVE YOUR DATA CENTER INFRASTRUCTURE MANAGEMENT

Cloud Europe's success story highlights how real-time visibility, proactive management, and seamless system integration can transform data center operations. By leveraging GENESIS, organizations can optimize efficiency, enhance reliability, and ensure business continuity—even in the most demanding environments.

Whether you're looking to modernize your existing infrastructure, improve operational resilience, or drive greater energy efficiency, GENESIS provides the tools you need to achieve higher levels of your infrastructure management maturity.

To learn more about GENESIS and how we can help solve your DCIM challenges:

- Explore our industry webpage to discover more about our solutions
- Contact an expert for personalized guidance
- Experience our online Data Center application demo

ABOUT US

Mitsubishi Electric Iconics Digital Solutions (MEIDS), headquartered in Foxborough, Massachusetts, is a global leader in industrial automation, smart and sustainable buildings, and digitalization software. Our advanced HMI, SCADA, and Smart Building solutions enable businesses to visualize, monitor, and optimize their most critical assets and spaces. With installations in over 100 countries and adoption by more than 70% of Global 500 companies, we drive operational efficiency and continuous improvement across industrial manufacturing, infrastructure, and built environment sectors. Backed by cutting-edge technology and deep industry expertise, we deliver flexible, scalable, and high-performance software solutions. As a testament to our excellence, Mitsubishi Electric Iconics Digital Solutions has been recognized as a seven-time winner of the Microsoft Partner of the Year award.

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