

Delivering Energy Performance & Streamlined Controls: The MSI approach

Unlocking Energy Performance, Patient Outcomes,
and Cybersecurity Through Master Systems
Integration (MSI) in Healthcare

Executive Summary

Healthcare systems today are managing increasingly complex building technology portfolios spread across large, multi-site campuses and distributed care locations.

When building technology systems are siloed and locked down in proprietary software, it leads to higher operating costs, elevated cybersecurity risks and maintenance inefficiencies. The Master Systems Integrator (MSI) model addresses these challenges by bridging the longstanding gap between Information Technology (IT) and Operational Technology (OT) teams.

This whitepaper outlines the foundational principles of the MSI approach and demonstrates how it enables healthcare organizations to gain visibility, enhance cybersecurity, reduce long-term costs, and future-proof their facilities. While we are focused on the priority challenges and benefits to healthcare facilities in this paper, the principles apply to a broad cross-section of real estate portfolios with increasing technology adoption.

This paper aims to demonstrate the value of an MSI as a strategic partner, optimizing performance at the enterprise level—and not just another contractor or controls vendor.

The Challenge

Healthcare facilities portfolios rely on a vast array of building systems—including HVAC, lighting, emergency power, medical gas and nurse call—to provide the critical care and healthy environments for patients.

These systems are often deployed in silos, by different vendors, at different times, with no common integration strategy.

A major contributor to this fragmentation is the disconnect between IT (Information Technology) and OT (Operational Technology) networks. Historically, IT environments are tightly controlled within the organization, whereas OT networks are outsourced to vendors. This split in management and procurement of technology can result in:

- **Poor visibility and accountability for performance and cost across systems**
- **Inefficient and high costs for facilities management due to a lack of KPIs for each vendor**
- **Increased cybersecurity vulnerabilities**
- **Inefficient energy use and missed savings opportunities**
- **Inflexible systems that are difficult to adapt to new technologies**
- **Scalability limitations as systems and facilities continue to grow**

These issues directly impact operational reliability, patient outcomes, and bottom-line performance.



The MSI Solution

What is a Master Systems Integrator?

An MSI ensures interoperability of disparate systems across a building portfolio. They are vendor-neutral, technology-agnostic, and focused on decoupling software functionality from hardware dependencies. **The MSI model promotes long-term flexibility, standardization, and cost control.**

The MSI creates the connective tissue that aligns these disciplines, designing and implementing integration strategies that respect both *IT and OT* requirements.

The MSI model plays a critical role in bridging the longstanding gap between IT and OT teams.



The MSI creates the connective tissue that aligns these disciplines, designing and implementing integration strategies that respect both IT and OT requirements. By translating the operational needs of building systems into the language of enterprise IT, the MSI consolidates building technologies onto a unified, secure IT backbone. This approach allows healthcare organizations to integrate Building Automation Systems (BAS), lighting controls, metering, life safety systems, and clinical infrastructure such as nurse call and telemetry, while also enforcing cybersecurity standards, managing traffic segmentation, and leveraging analytics to optimize building performance.

MSI Strategy in Practice

Deploying MSI at the enterprise level requires robust standards:

Division 25 (integrated automation) specifications that encode organizational BAS strategies

BAS design standards to govern front-end graphics, functional user requirements and back-end analytics integrations

Converged IT network standards aligned with organizational IT requirements and management protocols

Organizations that adopt this model benefit from:



Reduced infrastructure and support costs



Improved cybersecurity posture



Streamlined commissioning and faster project delivery



Operational insights through real-time performance analytics

Implementation Framework

1. Appoint a Cross-Functional Champion

Success begins with the organization's internal leader(s) who bridge IT, facilities, operations, and capital planning.

2. Develop Technical Standards

Define and document consistent requirements for:

- IT network architecture
 - Control system design, including sequences of operations
 - Naming and data ontology requirements
 - BAS and other hardware
 - Graphics and user interfaces
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3. Create Levels of Control

Work with your MSI to establish a clear distinction and definition for your organization of Local Control vs Supervisory Control. The MSI doesn't necessarily replace local control systems, such as HVAC, lighting, emergency power, life safety, etc. It enhances these distributed systems through a supervisory layer, where standardized data ontology, front-end graphics, alarming, scheduling, and optimization occur. More importantly, by optimizing the supervisory level, the MSI decouples operational control from proprietary hardware and vendor lock-in. This gives organizations the flexibility to manage and upgrade systems on their own terms, without being limited to a single vendor's roadmap.

Attributes of a High-Performing MSI

Healthcare organizations should partner with an MSI that offers:



Broad technical expertise, including IT, cybersecurity, and BAS



Enterprise-level thinking— not just project-based execution
(solutions that scale)



Vendor neutrality and long-term support capabilities



Proven experience in enterprise healthcare environments

Value for Enterprise Healthcare Leaders

When properly executed, the MSI model delivers:



\$900k

in annual savings

Lower total cost of ownership through centralization and standardization:

One national healthcare organization (and prominent healthcare provider in California) reported over \$900,000 in annual savings by consolidating BAS server infrastructure, licensing, and IT support under a unified, MSI-led strategy.



\$8M

reduction

Simplified vendor procurement and coordination with a single integration point of contact:

On one recent healthcare new construction project in Texas, consolidating procurement under the MSI model helped reduce controls costs from \$16 million to \$8 million, while streamlining project delivery timelines and minimizing scope gaps.

Future-ready scalability across facility portfolios:

50%

reduction in controls costs

By embracing a vendor-agnostic architecture, organizations gain the flexibility to competitively bid controls scopes across multiple vendors. On one recent core and shell healthcare construction project in Texas, the owner realized a 50% reduction in controls costs through competitive bidding.

The complexity of managing building systems in healthcare is only growing—

with higher expectations for energy performance, cybersecurity, and operational resilience as building technology advances, and patient care still paramount.



The MSI model provides a structured, enterprise-wide integration framework that enables organizations to meet these increasing demands while remaining flexible and vendor-independent, **offering you as the building owner and operator to have full control over your building's system controls and visibility.**

Owners are saving millions of dollars and achieving higher performance by taking a strategic, long-term approach to MSI. This approach marks a fundamental shift from fragmented system coordination to unified, intelligent infrastructure management.

If this resonates with you; if your organization is facing similar challenges with fragmented building systems, vendor lock-in, or escalating integration costs, your organization is not alone. Whether you're looking to improve visibility across campuses, reduce operational risk, or unlock long-term cost savings through standardization, the MSI model is a proven path forward.



Interested in what a Master Systems Integrator (MSI) can do for your healthcare system, including a deeper look at potential savings and operational improvements? Reach out directly to **Sia Dabiri**, Systems Integration expert at Altura, at sdabiri@alturaassociates.com, 949-561-8432.