



Hospital Building Safety Board Technology and Research Committee

AGENDA

August 12, 2025
10:00 a.m. – 4:00 p.m.

The Committee may not discuss or act on any matter raised during the public comment section that is not included on this agenda, except to place the matter on a future meeting agenda. (Government Code §§ 11125, 11125.7, subd. (a).)

Locations:

[2020 West El Camino Ave, Conference Room 930, Sacramento, CA 95833](#)

[355 South Grand Avenue, Conference Room 2000, Los Angeles, CA 90071](#)

[Teams Meeting Access](#); Meeting ID: 286 674 074 448 6; Passcode: HQ3G9sW7

Call in: (916) 535-0978; Phone Conference ID: 445 219 912#

- Item #1 Call to Order and Welcome
Facilitator: Gary Dunger, Executive Director, Design and Construction, Cedars-Sinai Health System; Committee Chair (or designee)
- Item #2 Roll Call and Meeting Advisories/Expectations
Facilitator: Veronica Yuke, HCAI; HBSB Executive Director (or designee)
- Item #3 Presentation: Emerging Technology Futures Across Healthcare
- Discussion on the challenges and possibilities in both the design and operational sides of healthcare delivery – particularly in the areas of telemedicine integration, smart systems, robotics and the role of data infrastructure in supporting equitable, resilient care
 - Discussion and public input.
- Facilitator: Cathy Junda, MSc Engineering, Health Sector Technologies Practice Leader, Stantec (or designee)*

Item #1

Call to Order and Welcome

*Facilitator: Gary Dunger, Executive Director, Design and Construction
Cedar-Sinai Health System; Committee Chair (or designee)*

Item #2 Roll Call and Meeting Advisories/Expectations
*Facilitator: Veronica Yuke, HCAI; HBSB Executive Director (or
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Item #3

Presentation: Emerging Technology Futures Across Healthcare

- Discussion on the challenges and possibilities in both the design and operational sides of healthcare delivery – particularly in the areas of telemedicine integration, smart systems, robotics and the role of data infrastructure in supporting equitable, resilient care
- Discussion and public input

Facilitator: Cathy Junda, MSc Engineering, Health Sector Technologies Practice Leader, Stantec (or designee)



System to ECOsyst^{em}

Working in concert not
isolation

Viewing the entire campus as a
living, breathing ecosystem that
functions collectively to
enhance the patient experience
and operational efficiency

ECOSYSTEM THINKING





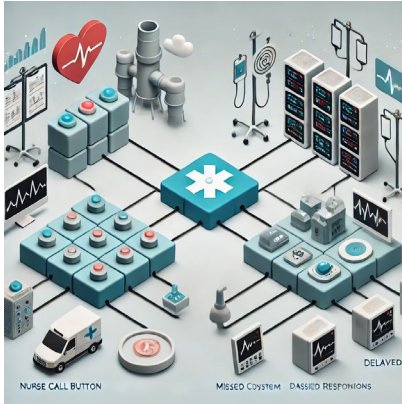
From Systems to Ecosystems: Shaping the Future of Integrated Thinking

The future lies in **ecosystem thinking**—designing environments where systems interconnect, data flows seamlessly, and solutions are built with a holistic mindset.





The Challenge of **Systems** Thinking



Systems thinking focuses on isolated **functions**. While effective in isolation, these approaches often lead to duplication, inefficiency, and missed opportunities for synergy.



Disjointed workflows, resource waste, and frustration for end users—whether they're patients, residents, or city dwellers.



Think **ECO**system not System

Individual systems can be difficult to manage and often service a functional purpose not a system outcome.

FUTURES

	Functional Purpose	System Outcome Alternative	Systems Leveraged	Benefits
Overhead Paging	General communications for staff and resident announcement, response calls and security.	Personalized communications for staff redirection, resident engagement and facility response.	Overhead paging, in-room resident entertainment services, on-device resident & staff application /information	• Staff & resident choice on information & alert consumption. • Confirmed delivery via device & applications. • Controlled environment that activates personnel needed without alarming others.
RTLS	One method for tracking and locating people and things	Insight driven services that enable staff and residents to navigate, respond, and while increasing the overall level of safety, security and facility operations.	Sensors, wearables, Ambient Devices (smart flooring), video resources, resident and staff devices, beacons, virtual command center, access controls	• Combines multiple technologies to create a clear and integrated picture of the overall system. • Multiple feeds incorporated into a single pane of glass that is manageable from centralized command center.



ICT / HICT

Includes systems designed to improve workflows, provide efficient operations

ICT includes the following systems

- Telecommunications Spaces and Pathways
- Structured Cabling System
- Network Equipment, Server Equipment
- VoIP / Telephone System
- 802.11 Wi-Fi Network
- Staff Mobile Communication
- Public Address System, Intercom,
- Video Conferencing,
- RTLS, Asset Tracking and Management
- Nurse Call and Patient Entertainment
- Security and camera systems (including CCTV)



Shift in Mindset



From Reactive to Intelligent Systems

- Traditional systems are siloed, manual, and disconnected from patient context
- Tomorrow's nurse call enables AI-powered triage, ambient sensing, and hybrid nursing
- Transforms the call system into a care orchestration platform

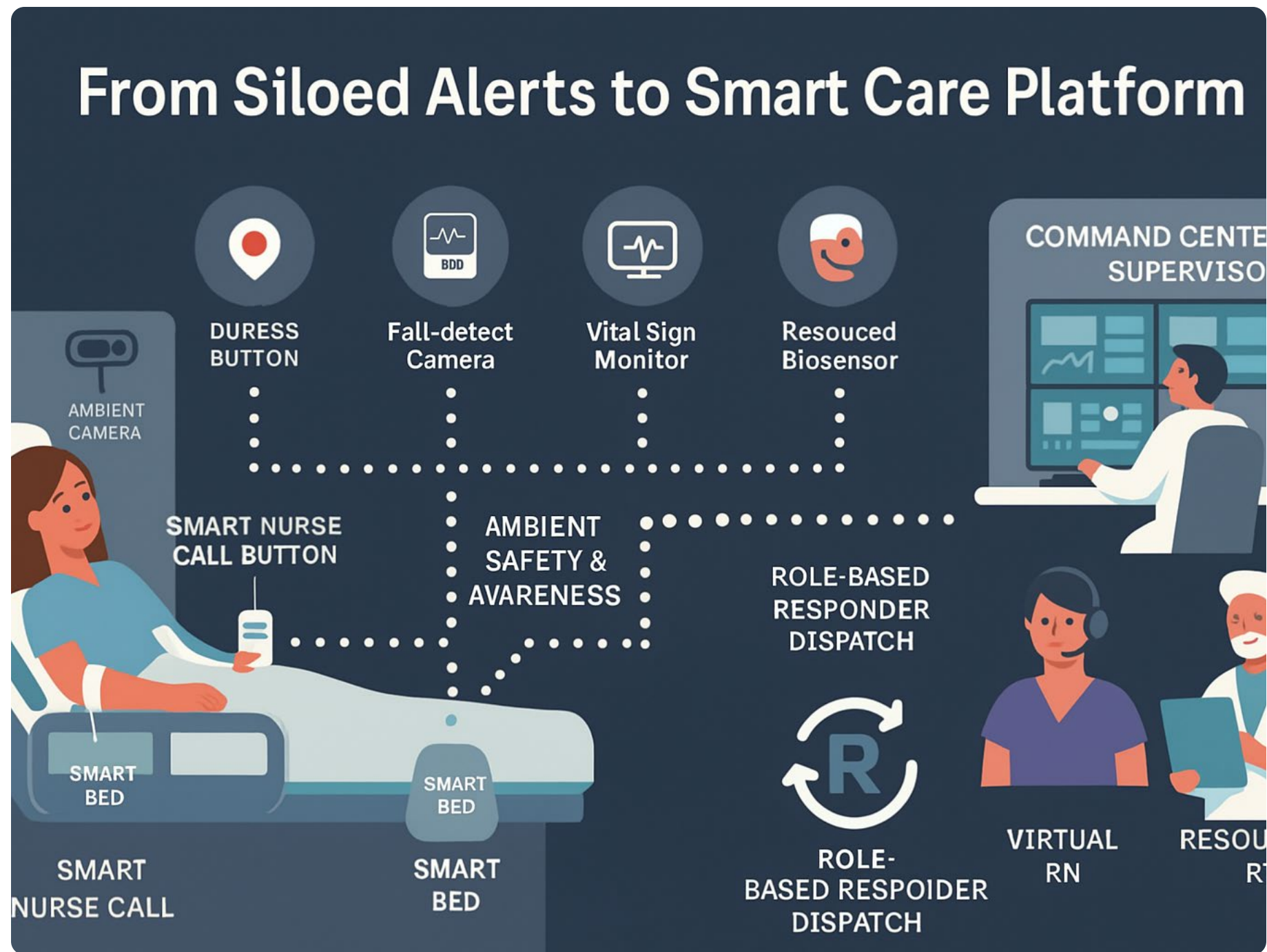
NURSE CALL





Design & Infrastructure Impacts

- Adaptive lighting & acoustic zoning tied to alert types
- Embedded sensors in headwalls and patient rooms
- Workflow-aligned room programming for hybrid teams
- Secure infrastructure with modular upgrade pathways
- Drives early engagement of IT, clinical ops, and engineering





Next-Generation Inpatient Command Center

Reimagining Care Coordination,
Intelligence, and Infrastructure

COMMAND CENTER





The Intelligent Nerve Center of the Hospital

- Centralized platform integrating real-time data from EHR, RTLS, nurse call, sensors, and facilities
- AI-driven alerting and predictive analytics for safety and throughput
- Live dashboards for operational flow, capacity, and care escalation
- Empowers decision-makers with visibility, coordination, and control

Command centers shift operations from reactive to proactive.

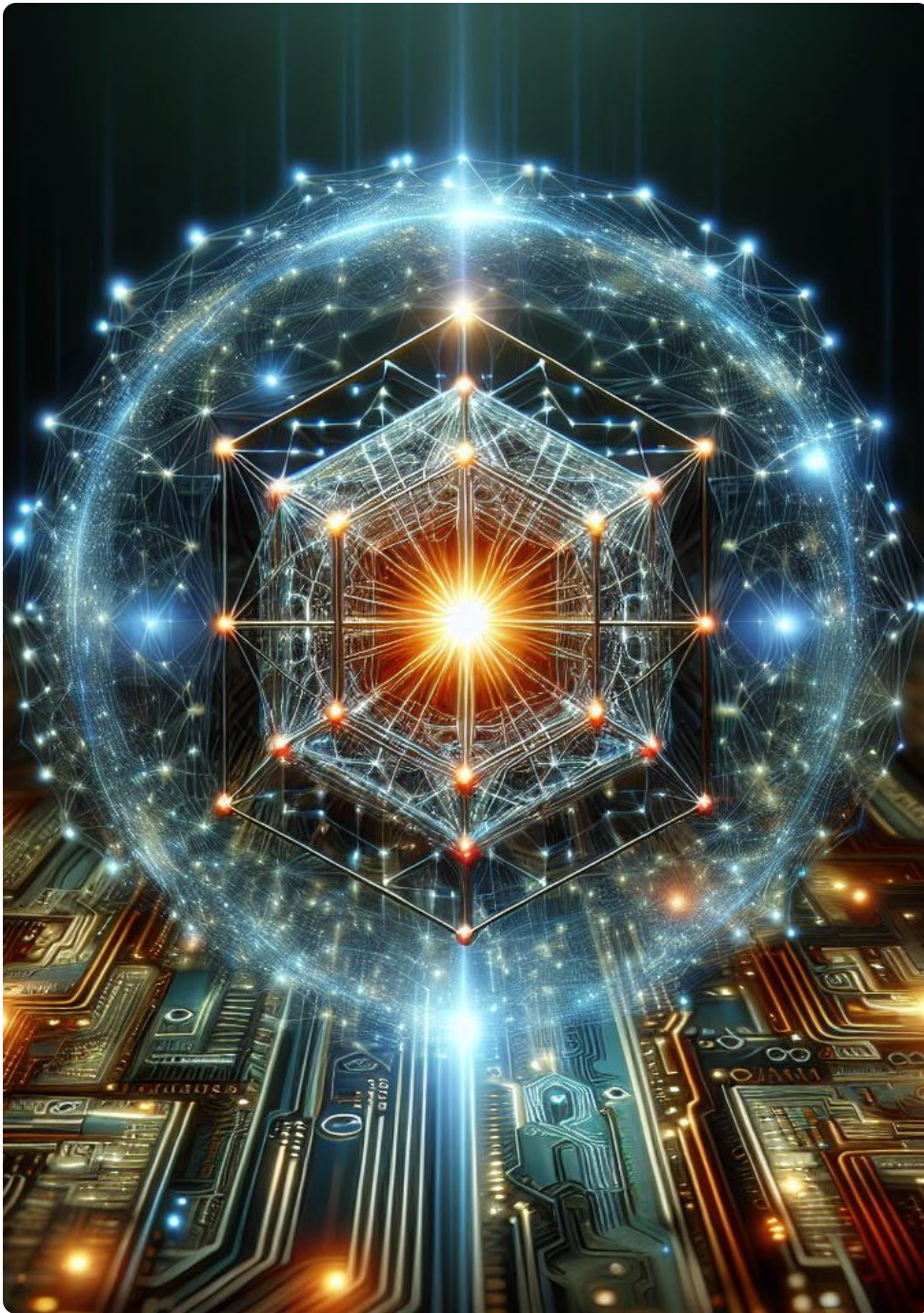




Advanced Digital OR

The Next-Gen Digital OR is not just a room. It's a sensor-rich, XR-integrated, data-activated surgical environment that becomes the epicenter of patient care, team coordination, education, and operational insight.





Digital Infrastructure & Architectural Design

- Real-time data pipelines and FHIR-compatible integration layers
- Redundant power, dual-network paths, and localized failover systems
- Tiered access zones with privacy-sensitive digital identity management
- Multi-screen immersive visualization environments
- Proximate location to executive decision-makers and IT operations

Designed as a resilient, secure, and adaptive digital core.



Stakeholder Value: From Staff to Systems

- **Clinicians:** Faster triage, safer handoffs, actionable alerts
- **Bed Managers:** Flow optimization, discharge prediction
- **Executives/Admin:** KPI monitoring, cost control, staffing foresight
- **Facilities/IT:** Sensor integration, infrastructure responsiveness
- **Patients/Families:** Fewer delays, better outcomes, clearer communication

Each stakeholder experiences the hospital as smarter and more synchronized.





The Ecosystem Advantage

A paradigm where individual systems are interconnected and interdependent, designed to **function as a whole**. It focuses on shared goals, seamless integration, and adaptability.

Interconnectivity: Systems exchange data and collaborate.

Holistic Focus: Prioritizes functions (e.g., staff-patient communication) over isolated systems.

Adaptability: Ecosystems evolve with changing needs.



Pros & Cons

Pros:

- Adaptability to changing needs.
- Encourages innovation and collaboration.
- Enhances outcomes for patients and providers.
- Resilience in crises.

Cons:

- Requires a mindset shift.
- Involves greater upfront collaboration and investment.
- Can add complexity to implementation.





How do they differ?

System Thinking:

- Focus on individual components.
- Specialized but limited.
- Linear and predictable.

Ecosystem Thinking:

- Focus on relationships and interdependence.
- Adaptive and resilient.
- Thrives in complexity.

Aspect	Systems Thinking	Ecosystem Thinking
Focus	Individual	Collective Impact
Operation	Linear	Adaptive
Value	Efficiency	Resilience





Digital Visioning: Designing the Future-Ready Health System

Aligning clinical, operational and digital strategy from day one

What Is Digital Visioning?

A strategic design layer that anticipates and integrates **technology, data, and clinical workflows** into capital planning.

Why It Matters

Transforms infrastructure into a platform for innovation, care coordination, and adaptive operations.

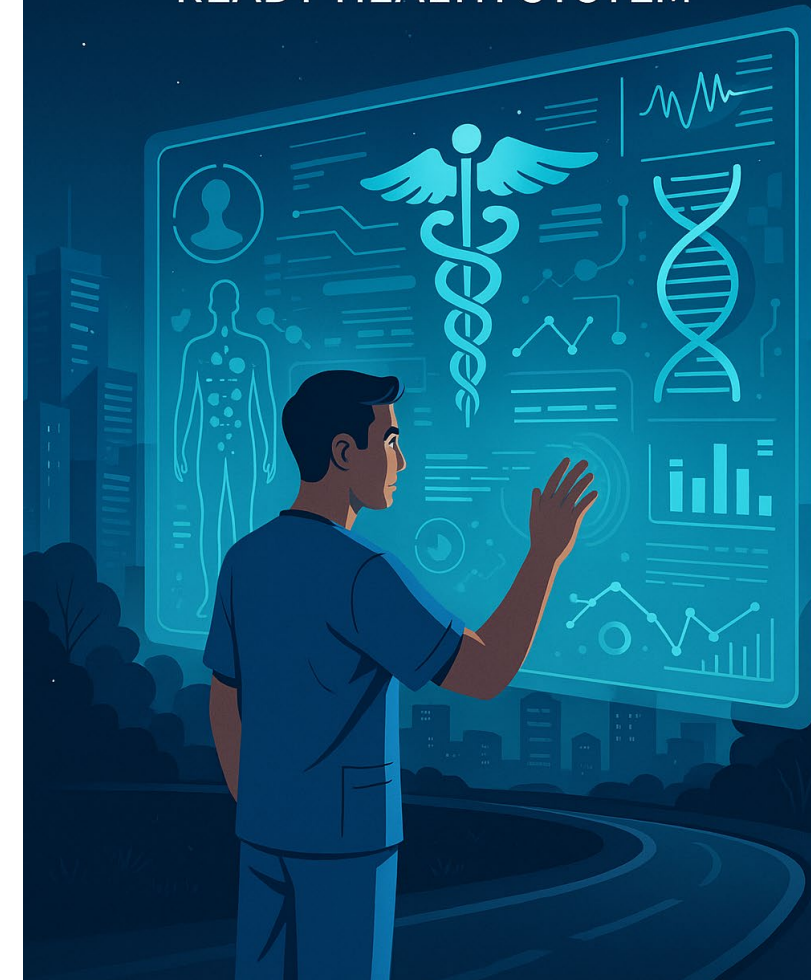
Key Elements

- AI + automation readiness
- Interoperability architecture
- Virtual + hybrid care workflows
- Smart building + IT/OT convergence
- Experience-centered, data-driven design

Outcomes It Enables

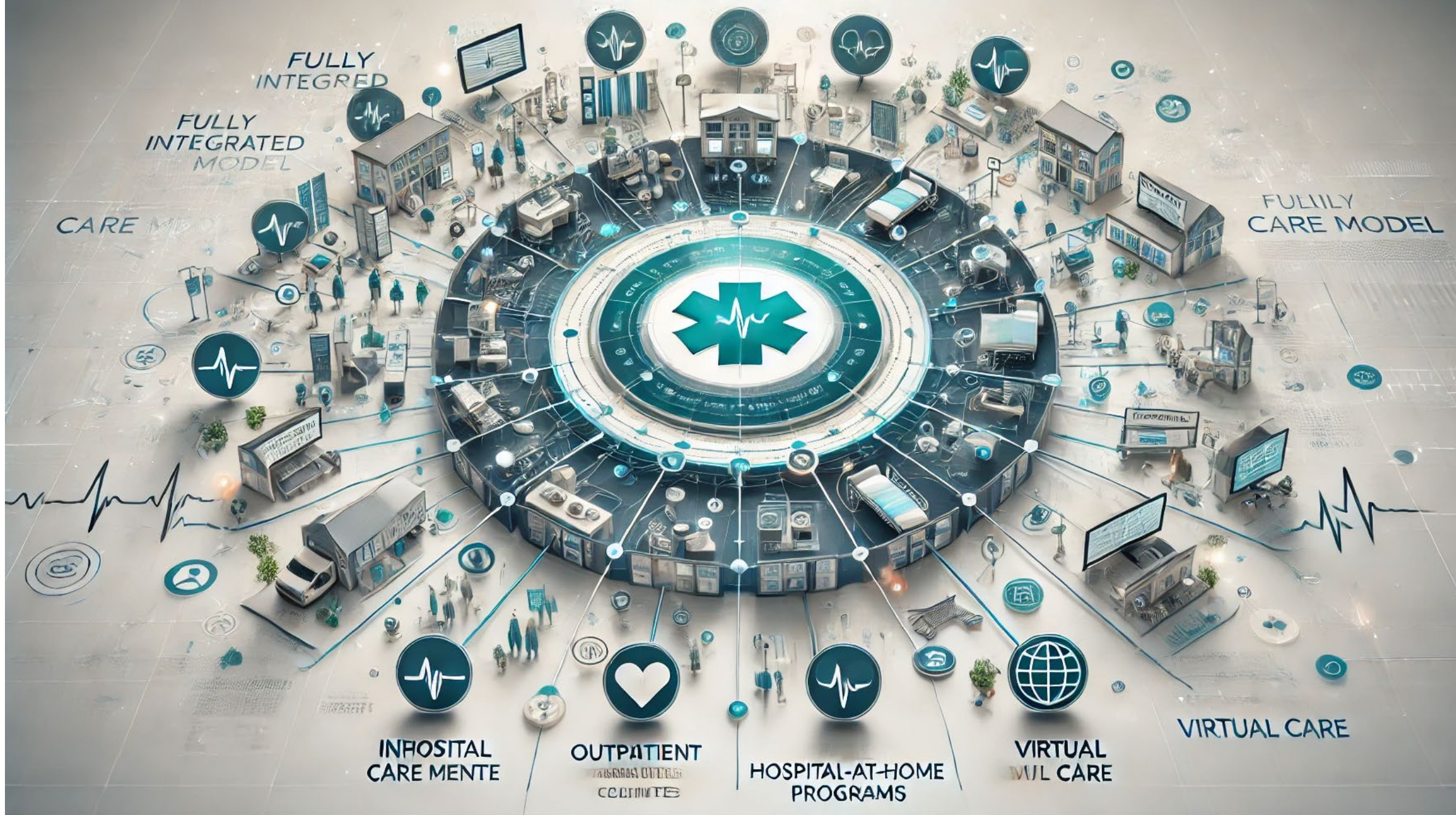
- **Faster** response times
- Safer, **smarter** environments
- **Scalable** digital ecosystems
- **Resilience** in crisis and growth

DIGITAL VISIONING: DESIGNING THE FUTURE- READY HEALTH SYSTEM





FULLY INTEGRATED CARE MODUL



Clinical Enablement & Communication Layer

(Care Team Experience)

Empower care teams through seamless, intelligent, and context-aware systems.

- **Ambient Clinical Intelligence (ACI):** Real-time voice capture, automated documentation, intelligent alerts—enabling seamless clinical insight.
- **Hybrid Nursing:** A digitally enabled care model that blends in-person and virtual roles for clinical escalation, triage, and smart team coordination.
- **Smart Patient Rooms:** Empowering patients with control over lighting, environment, and interaction
- **Inpatient Wireless Monitoring:** Continuous sensor-based vitals and acuity-adjusted alerting
- **RTLS for Badging & Tracking:** Real-time staff safety, asset tracking, and patient flow optimization



Clinical Enablement & Communication



Ambient Clinical Intelligence (ACI)

(Care Team Experience)

Real-time voice capture, automated documentation, intelligent alerts—enabling seamless clinical insight and reducing cognitive load.

Ambient Clinical Intelligence refers to systems that **passively capture clinical interactions** and environmental data in real-time using voice, video, sensors, and AI.

These technologies work unobtrusively in the background to **automate** documentation, enhance situational awareness, and support clinical decision-making—without disrupting the flow of care.



Clinical Enablement & Communication



Hybrid Nursing

(Care Team Experience)

A digitally enabled care model that blends in-person and virtual roles for clinical escalation, triage, and smart team coordination.

Hybrid Nursing is a care delivery model that integrates in-person clinical staff with remote **virtual nursing teams**.

It leverages digital technologies, such as video interfaces, remote patient monitoring (RPM), intelligent routing, and command center support to **extend clinical capacity**, improve responsiveness, and ensure that nursing care is prioritized and escalated appropriately.

Hybrid Nursing allows hospitals to adapt to workforce constraints, enhance care continuity, and build resiliency into patient support services.



Clinical Enablement & Communication

Smart Patient Rooms

(Care Team Experience)

Empowering patients with control over lighting, temperature, entertainment, and nurse call—supporting dignity, comfort, and autonomy.

Smart Patient Rooms integrate intelligent systems that give patients more **control over their environment** and enhance clinical workflows.

These rooms combine automation, voice/gesture controls, personalized settings, and digital interfaces to **foster autonomy**, comfort, and safer care experiences.



Clinical Enablement & Communication



Inpatient Wireless Monitoring

(Care Team Experience)

Continuous, unobtrusive vitals tracking through sensors—enabling acuity-adjusted alerting and early detection of deterioration.

Inpatient Wireless Monitoring refers to the continuous, **non-invasive capture of vital signs** using wearable sensors or ambient devices that transmit data in real time to clinical systems.

These technologies allow for **acuity-adjusted alerts** and early detection of patient deterioration without reliance on periodic manual checks.



Clinical Enablement & Communication



Digital OR

The Next-Gen Digital OR is not just a room. It's a sensor-rich, XR-integrated, data-activated surgical environment that becomes the epicenter of patient care, team coordination, education, and operational insight.





Key Components

Ambient Sensor Ecosystem

- Tracks movement, conditions, equipment usage
- Integrated analytics for infection control, safety, and efficiency

XR + Image-Guided Integration

- Real-time holography and surgical overlays
- Medivis, spatial computing, robotic platform integration

VR for Training & Simulation

- Digital twins, immersive surgical planning, debrief replays

Operational Intelligence

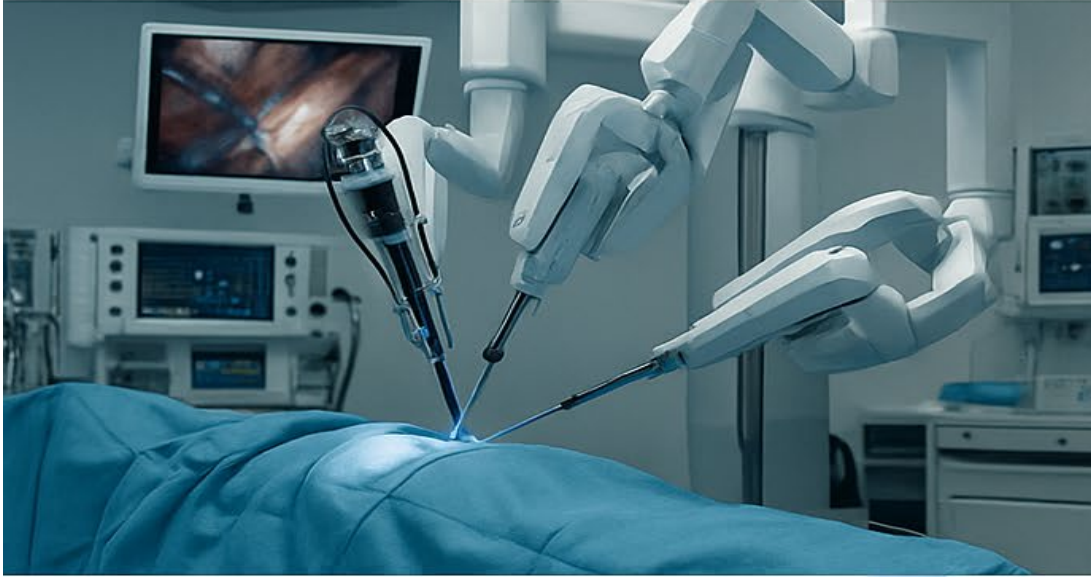
- Time tracking, predictive scheduling, capacity dashboards



Robotics in the Health Ecosystem

From Precision Surgery to Autonomous Support

Extending human capability, precision, and efficiency through integrated robotics.



Clinical Robotics

- AI-enhanced precision for minimally invasive procedures
- Integration with Digital OR data streams for real-time decision support
- Multi-specialty adaptability (orthopedic, neurosurgical, urologic, cardiac)



Operational Robotics

- Autonomous delivery for meals, linens, pharmacy, lab specimens, and waste management
- Wayfinding and patient escort robots with multi-language AI interfaces



Robotics in the Health Ecosystem

From Precision Surgery to Autonomous Support

Clinical Robotics – Surgical Assist

- AI-enhanced precision for minimally invasive procedures
- Integration with Digital OR data streams for real-time decision support
- Multi-specialty adaptability (orthopedic, neurosurgical, urologic, cardiac)
- Training & simulation capabilities using XR/VR environments

Outcome Focus: Reduced complication rates, shorter recovery times, enhanced surgical accuracy

Operational Robotics – RPA & Autonomous Services

- Autonomous delivery for meals, linens, pharmacy, lab specimens, and waste management
- Wayfinding and patient escort robots with multi-language AI interfaces
- Integration with RTLS and hospital scheduling for just-in-time delivery
- Secure payload compartments with chain-of-custody tracking for sensitive materials

Outcome Focus: Increased staff availability for patient care, reduced delays, improved safety



**“Are we
designing for
today’s
challenges or
tomorrow’s
possibilities?”**





Thank you



Item #4

Presentation: Electronic Testing, Inspection and Observation (eTIO) Program

- Update on recent developments with the eTIO program and a live demonstration from the HCAI Inspection Services Unit.
- Discussion and public input

Facilitator: Chris Davis, SE, District Structural Engineer, HCAI (or designee)



eTIO Status

Inspection Services Unit



Item #5

Presentation: Energy Conservation and Systems Integration Using New Lighting Technologies

- This presentation will review new technologies for interior lighting with integrations into Building Management Systems that will enhance energy optimization, enable real-time space utilization monitoring, and support intuitive and efficient clinical and operational workflows.
- Discussion and public input

Facilitator: Moe Goudarzi, PE, Principal, ARUP (or designee)

Healthcare

Lighting Technology

Building Management System

How it works Today



RS-485

CAT-6

Past

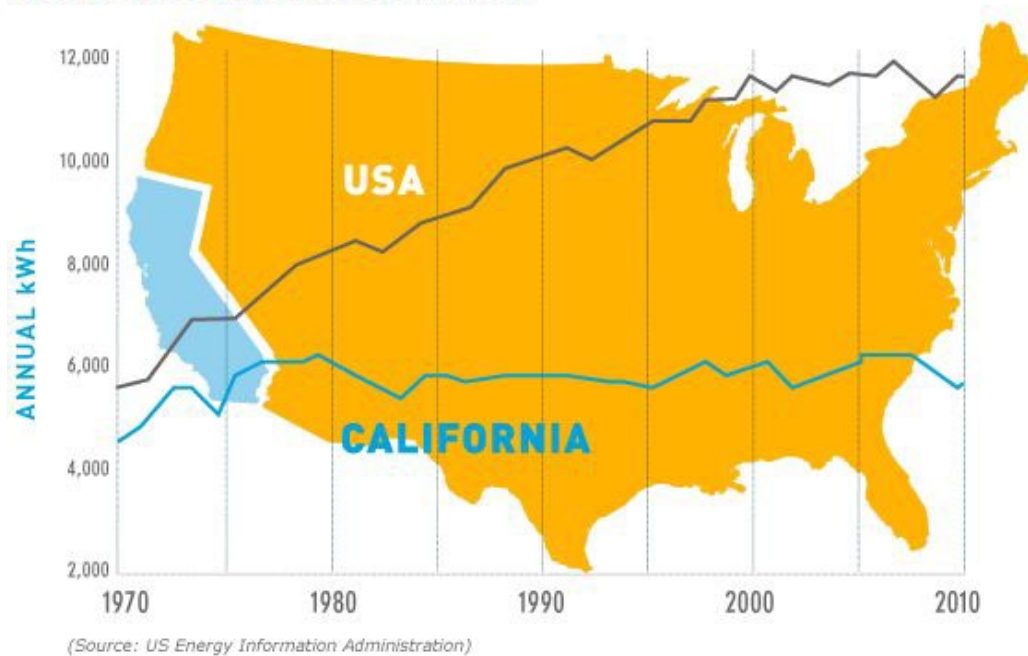
Future



Regulations

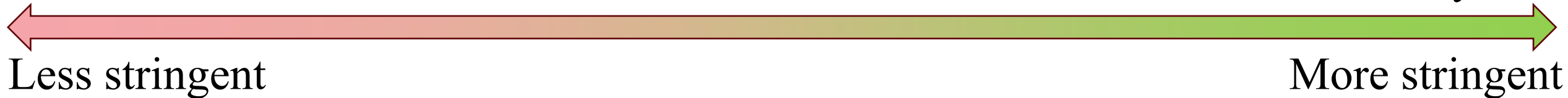
Why?

PER CAPITA ELECTRICITY CONSUMPTION



1960

2024 & Beyond



What does “Open” Mean?

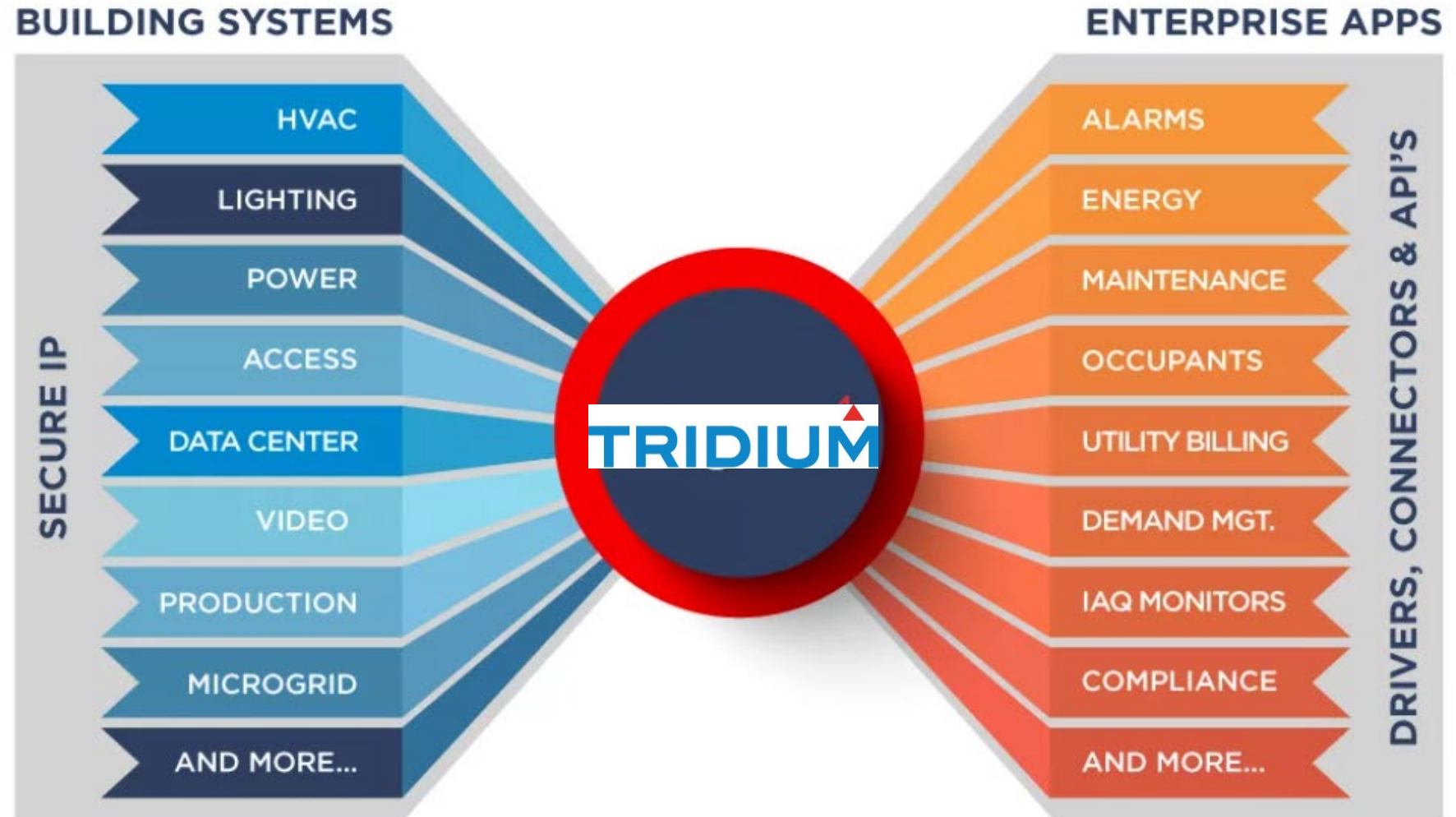
Open Framework (multiple vendors can work on it)

Open APIs (Application Programming Interface) for developers

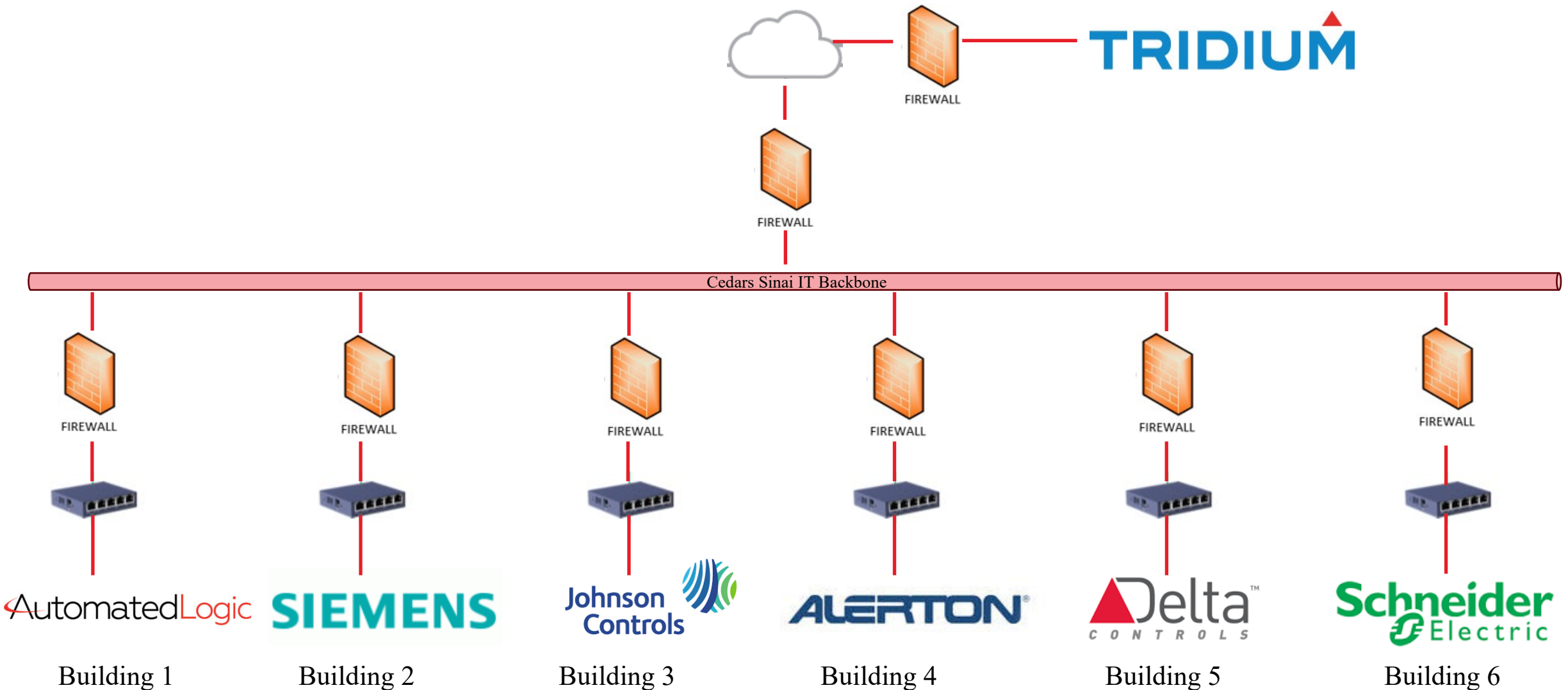
Open Distribution

Empowers client

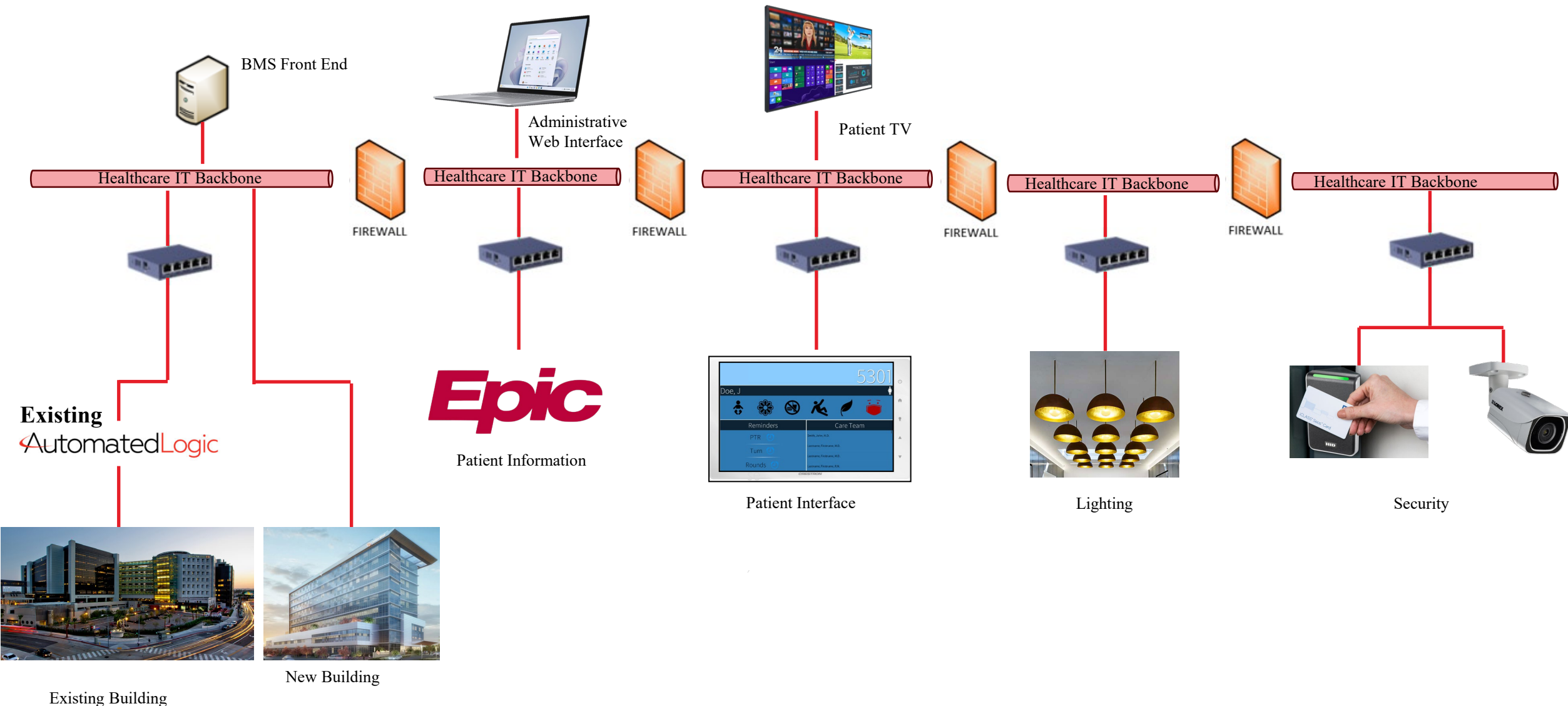
Prevents vendor lock



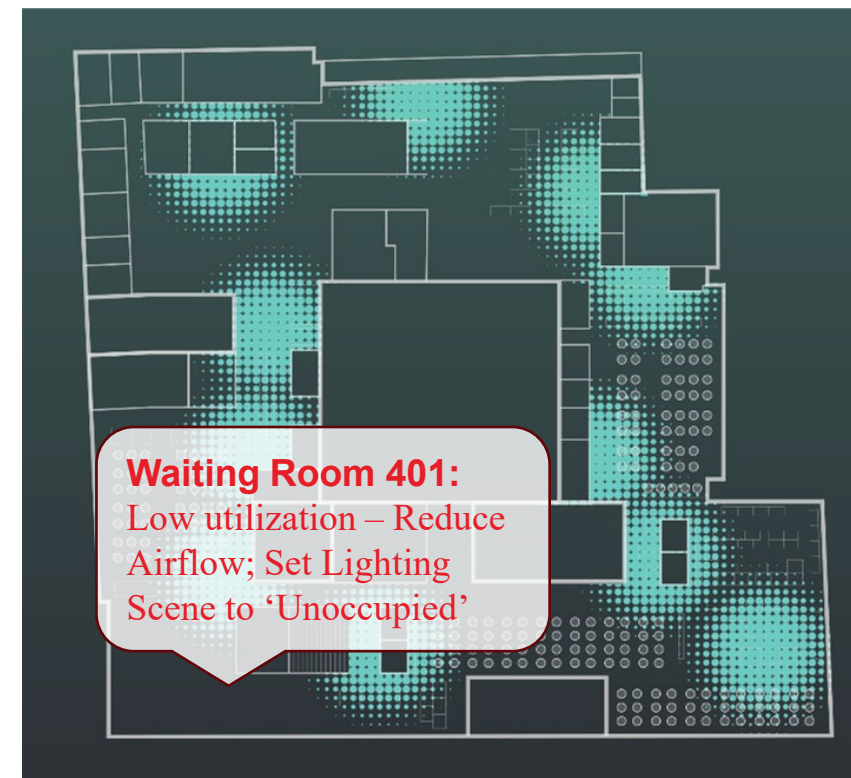
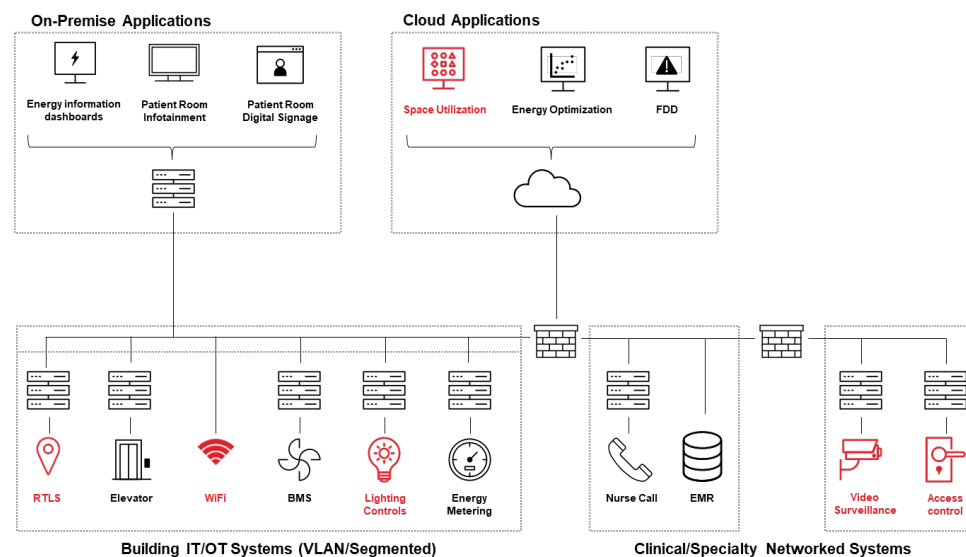
Enterprise Connection



Enterprise Integration



Space Utilization Monitoring



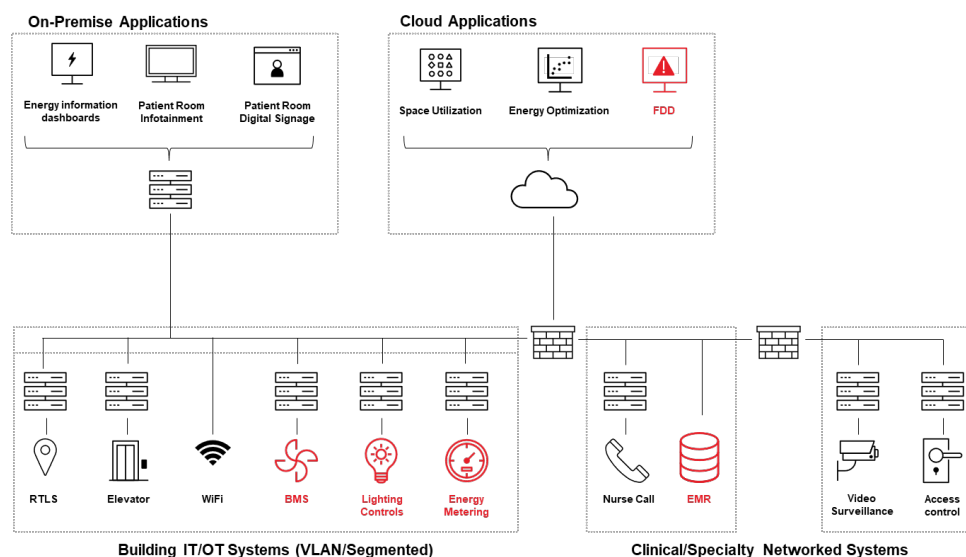
This indicative *integrated systems architecture* ...

... supports intuitive and efficient *clinical and operational workflows*.

Indicative/Example Vendors/Platforms



Enhanced Energy Optimization



Before: HVAC running whether occupied or not

After: HVAC runtime scheduled based on realtime and predicted occupancy



*This indicative **integrated systems architecture** ...*

*... supports intuitive and efficient **clinical and operational workflows**.*

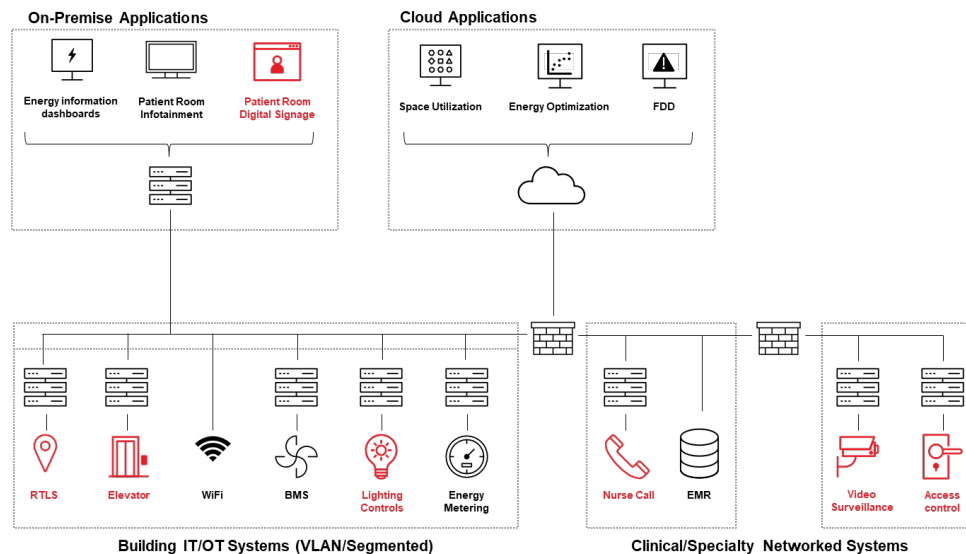
Indicative/Example Vendors/Platforms

SkyFoundry



CopperTree Analytics

Code Yellow Automated Workflow

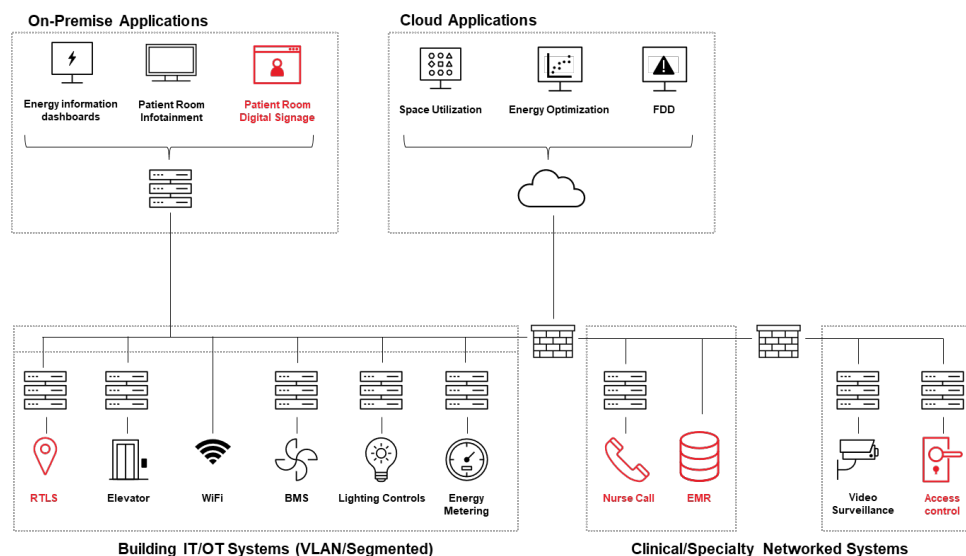


This indicative *integrated systems architecture* ...

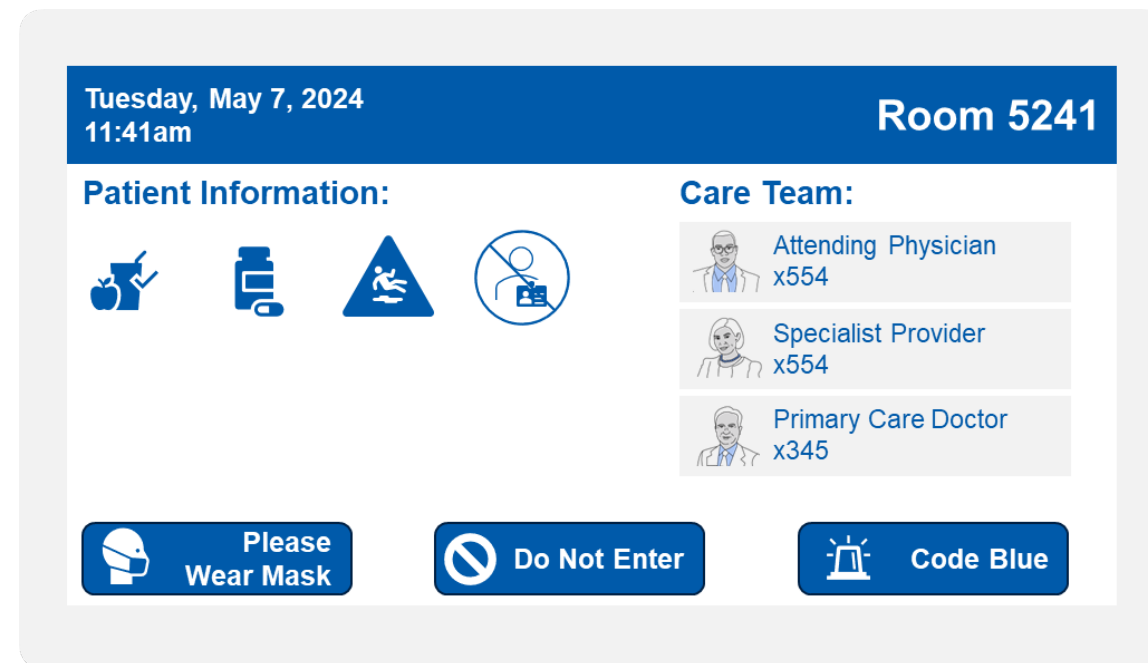


... supports intuitive and efficient *clinical and operational workflows*.

Integrated Patient Room Digital Signage

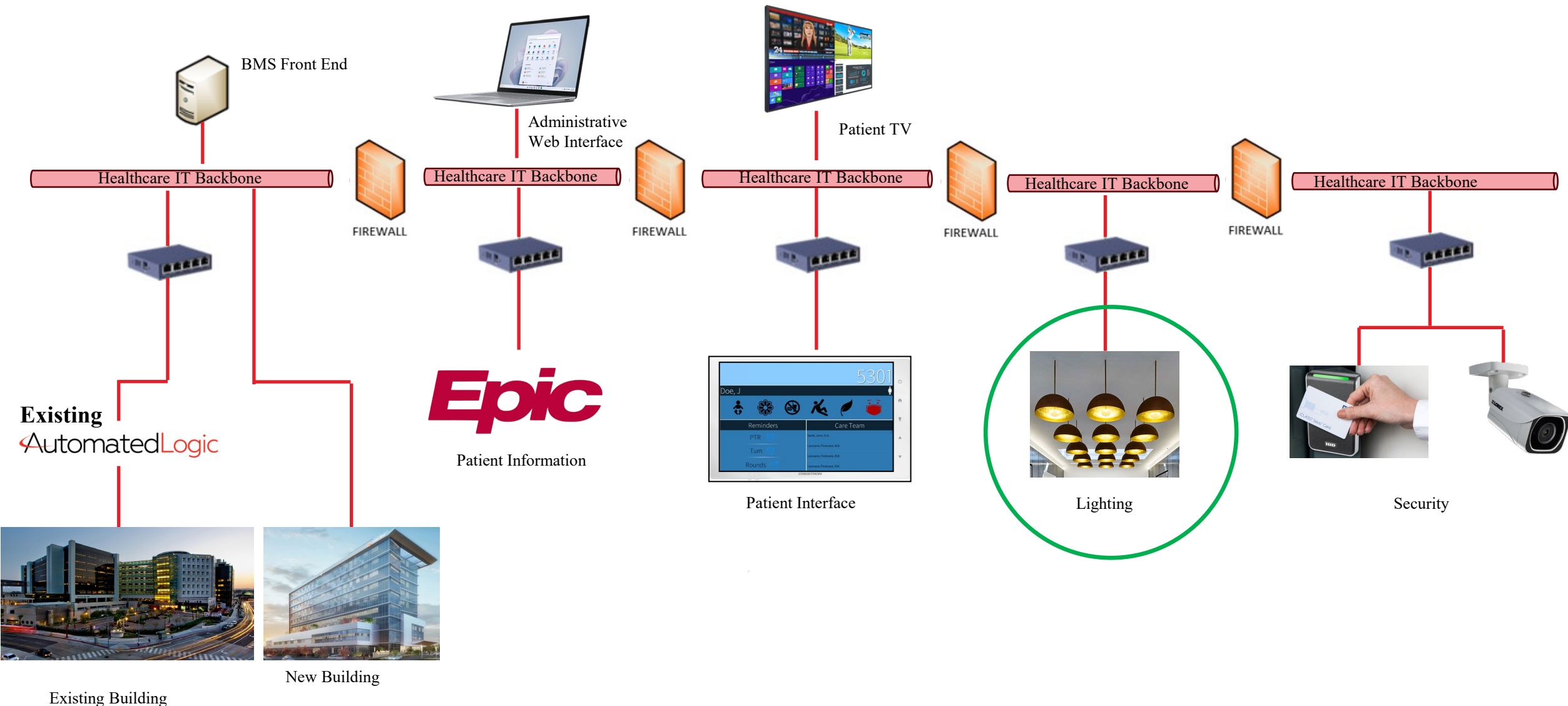


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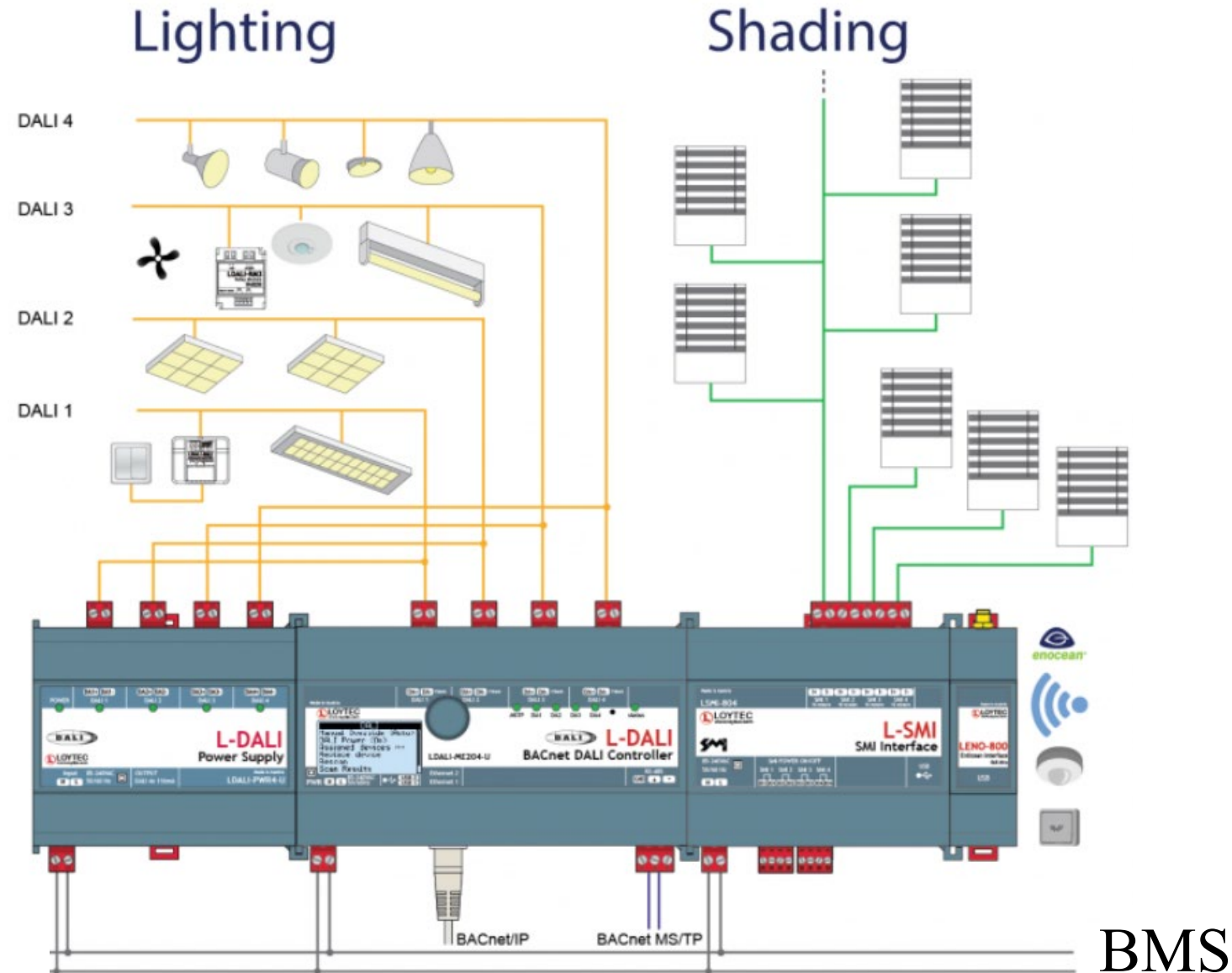


*... supports intuitive and efficient **clinical and operational workflows**.*

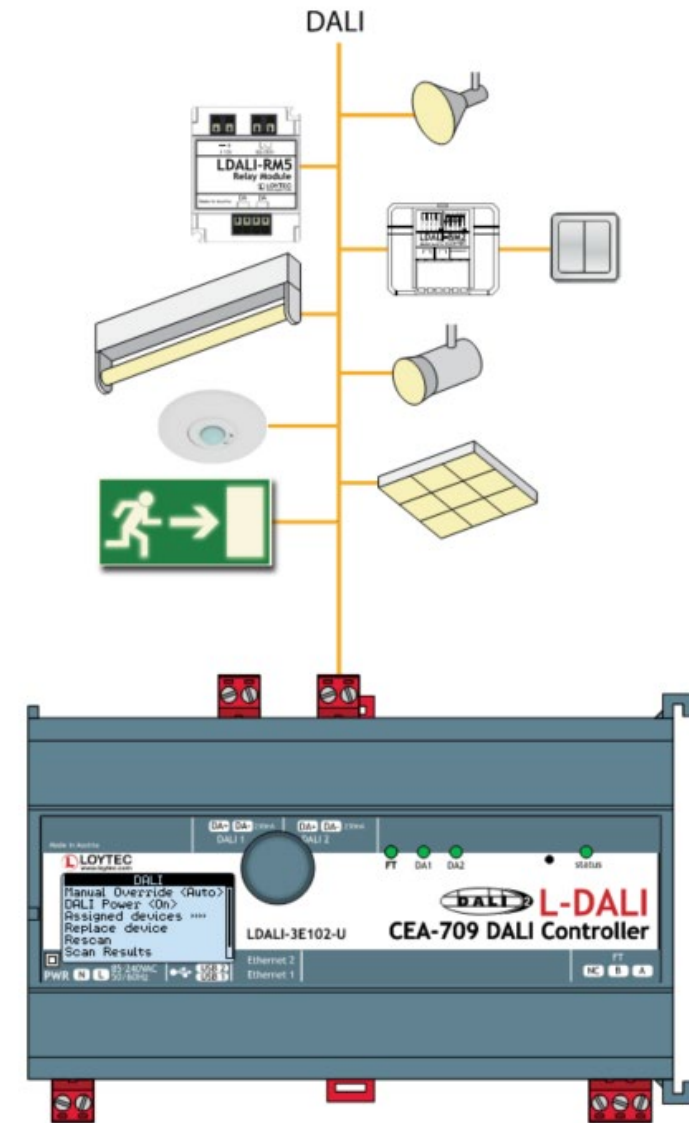
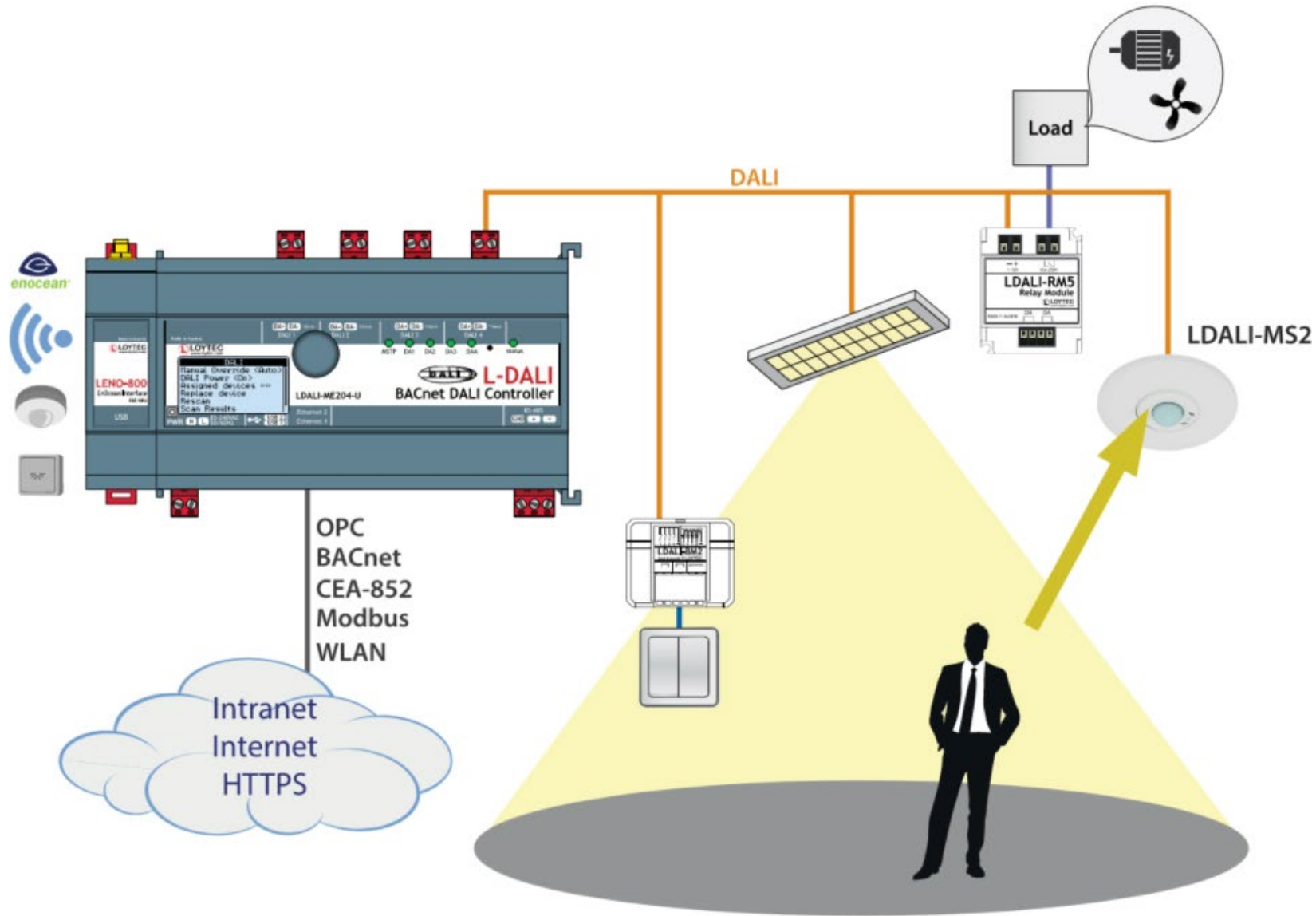
Enterprise Integration



Lighting Controls Connection to BMS



Lighting Controls Connection to BMS



ARUP

Item #6

Comments from the Public/Committee Members on Issues not on this Agenda.

The Committee will receive comments from the Public/Committee Members. Matters raised at this time may be taken under consideration for placement on a subsequent agenda

- Discussion and public input

Facilitator: Gary Dunger (or designee)

Item #7 Adjournment