



**IFMA
FOUNDATION**
MAKING FM A CAREER OF CHOICE

**IFMA World Workplace Europe
Academic and Research (A&R) Track
Houston, Texas
19 October 2017**

Conference Proceedings

Editors:

Jake Smithwick, PhD, MPA
University of North Carolina at Charlotte
Jake.Smithwick@unc.edu

Kenneth Sullivan, PhD, MBA
Arizona State University
Kenneth.Sullivan@asu.edu

Kristen Hurtado, MS
Arizona State University
Kristen.Hurtado@asu.edu

Intelligent Building Technology Improves User Experience

Craig Park¹, Gregory Clark², and J. P. Bonin³

¹The Sextant Group. cpark@thesextantgroup.com

²The Sextant Group. gclark@thesextantgroup.com

³The Sextant Group. jpbonin@thesextantgroup.com

The age of audiovisual (AV) and information technology (IT) convergence is no longer just a utopian idea or theory discussed among techie-types in the know. Technology convergence and the methods for managing AV systems within both facilities and IT environments can now be addressed in more effective ways. These once traditionally separated groups within the enterprise now have blended responsibilities for implementing and supporting highly-utilized collaborative spaces equipped with technology tools spread throughout the organization.

Today, an integral approach can link to all of the disparate industry-standard protocols for connectivity and communication (e.g., BACNet, SNMP, TCP/IP, Ethernet, IEEE 802.1x, HDBaseT, etc.) under a common network framework that facilitates operational management, monitoring, signal distribution, and management of all of the critical building systems, information systems and collaboration/communication systems. Integrating data within a holistic AV/IT/Building Technology framework significantly expands the ability to monitor and meet sustainability and energy management goals, in addition to providing a truly comprehensive view into all systems from an operational efficiency and deployment perspective.

In rapidly evolving, technology-rich environments, nearly all audiovisual devices communicate on standard IP network protocols and integrate with common, IT supported applications such as Unified Communication (UC) devices, soft-codec video platforms, room scheduling and calendar software, and more. For facilities and IT leadership and management these adoptions are necessary to keep pace with the IT-driven world, yet also require new methods for designing, implementing, and maintaining complex systems.

ESTABLISHING A BASELINE

With the same benefit that facilities design standards help organizations provide consistent spatial experiences for end-users, at the foundation layer for all enterprise-wide AV systems is the Control Processor Program (CPP) and relevant graphical user-interface (GUI). Using a detailed and defined system design process for the control system programming process establishes a consistent and repeatable baseline for the various room types. Equally important is setting an enterprise standard for an intuitive GUI for all the room system control panels.

This method assures that room system design standards, control program standards, and GUIs are synchronized—regardless of when, or by who the systems are designed and implemented—and eliminates variability associated with different designers, integrators, or third-party programmers and their interpretation of the “design intent.” Recognizing that the one constant for technology is “change,” the standardization process includes regular software updates to take advantage of new device or functionality availability.

PLATFORMS & SERVICES: ON-GOING SYSTEM COMPLIANCE

Once the standardization process has been created and there is synergy between AV/IT systems and programming code, the next step is to consider methods for both maintaining compliances and necessary updates to existing standards.

Like facilities standards—that address room sizes, technology options, and furniture, finishes, and equipment—AV/IT standards can be applied across the enterprise to ensure a common user experience. The difference is that AV/IT systems also provide real-time data to measure utilization, quality of service (QoS), and reliability. A connected enterprise allows IT staff to effectively monitor and control disparate systems from any location.

Flexible platform-based software as a service (SaaS) models exist on many levels. When combined with dedicated expert resources and tailored to fit an organization’s specific needs, AV becomes much easier and more manageable as a component of an enterprise’s technology ecosystem. Other advantages include system code and drawing file management, simple access to key vendor/warranty and critical contact information, and many other valuable insights and analytics.

FACILITIES ANALYTICS AND THE BUILDING OF THE FUTURE

This convergence highlights the importance of developing an integrated AV/IT platform that is scalable and flexible to work with and provide data to newer third-party platforms, whether they are the latest aggregated dashboards (e.g. Niagara, GE Current, ICONICS, etc.) or long-standing proprietary systems (e.g. Johnson Controls, Siemens, Schneider, Automated Logic, etc.). AV/IT data on room and system utilization, scheduling, energy consumption, etc., provides credible real-time information that can shape both planning for new and updates to existing facilities. At the same time, these systems can work as systematic checks and balances by sharing expanded room environmental systems data (i.e., heating/cooling, lighting, shades, access control, scheduling, etc.) that are also on the network.

For facilities and IT departments, benefits to integrated AV/IT standards development include:

- An established baseline for a technology standardization and compliance process, which can be used for managing and controlling new and future technology system designs
- Early inclusion of technology planning in facilities design process, establishing the consistent user-interface and control functionality based on direct user-group/client feedback
- Less organizational reliance on third-party system integrators for changes/updates—eliminating system “code ransom” challenges
- Significantly decreases issues related to system integrator variability (geographical or size of project scope)
- Greater control and flexibility to client in managing extended support and service contracts

THE GOAL: IMPROVING THE USER EXPERIENCE

In an era where facilities are being planned and designed to encourage and enable improved collaboration both locally and across global enterprises, AV/IT convergence can be applied to every use case and business unit, allowing for:

- More self-start meetings – easier to use, easier to support
- Minimize the technology hassles for all involved – scheduling, usability, and support
- Lower support costs via remote management and support
- Lower cost to acquire systems – standards compliance nets scalable procurement processes
- Consistent and predictable user experience from room to room, city to city, etc.
- More powerful, sophisticated, higher quality systems for sharing analytics
- Easier to schedule the systems and spaces
- Easier to follow-up after the meetings because they are recorded or documented
- More accurate forecasting of costs – capital purchase and on-going operational costs
- Track utilization of spaces and systems to add/change mix based on real enterprise need

Establishing a process for AV/IT convergence holistically aligned with facilities standards and building systems guides future decisions about space usage, scale, and need, and technology management from an enterprise portfolio perspective. As data mining and analytics are driving enterprise operational decisions, so can the input from technology-enhanced spaces provide valuable information to improve technology efficiency and the user experience, internally and externally, for the organization.

Keywords: User experience, technology convergence, standards development, data analytics, intelligent buildings, sustainable design