



Case Study

Passive Optical LAN

Integrated Solution Saves Time, Money & Space

Client:

- Management Systems International Inc.

Management Systems International Inc. (MSI), a Washington, DC-based international consultancy, provides management resources to developing nations and humanitarian agencies that collaboratively solve the most intractable problems around the developing world. After thirty years occupying floating office space in the Channel Harbor of the Potomac River, MSI relocated to office space in Arlington, Virginia. KGO Project Management, an industry leading, independent, solutions-driven project management firm invited VT Group to propose a unified network architecture to fulfill MSI's progressive technology needs.

Core Activities:

- Design, build and installation of a state-of-the-art Passive Optical LAN system with integrated AV system, access control, sound masking, and video monitoring/ recording system for MSI headquarters in Arlington, VA.
- Transformation of seven thousand square feet of dedicated meeting space into powerful collaboration hubs by combining smart and creative ideas with proven networking and AV technology.

VT Group designed and delivered a fully integrated voice, data, security, and audiovisual (AV) system that provides MSI with an easily-managed, turnkey solution. The Passive Optical LAN design eliminates a distribution layer of switching and excess space in data closets. VT Group planned the core architecture design to satisfy the connectivity and routing requirements of the overall network, developed and implemented the switch configurations, and verified all network communication requirements of all networked systems. The core switch provides a multi-gigabit port channel downlink to the Optical LAN head end chassis (Optical Line Terminal), delivering access to all devices on the network, including end-user PCs/laptops, VoIP phones, wireless access points, security cameras, access control system components, HD digital media components, AV control system components, IP intercom system components, H.264 streaming encoders, and room scheduling panels. The core switch also acts as the edge distribution, providing the interface to the firewall and WAN block, where VPN services are enabled to provide connectivity to MSI's consolidated data center. The new design replaced Ethernet cables with fiber, which saved MSI money and enabled them to invest in additional technology solutions.

VT Group designed an AV super-system to tie all of the individual meeting spaces together; each space is both self sufficient and capable of fluidly combining into interdependent systems. The facility has nineteen separate and unique meeting rooms ranging from 120 to 900 square feet-- there are single purpose team rooms, large conference rooms, and open plan seating spaces—each offering a wide array of powerful communication tools to end users. Each floor has a cluster of meeting spaces with operable partitions that can combine to create large AV presentation spaces and accommodate a variety of events.

VT Group's "everything IP over Optical LAN" design approach isolates disparate systems and their associated traffic in separate VLANs and provides routing and access required to satisfy communication requirements. This not only provides separate broadcast domains, but also allows for efficient and reliable implementation of access control, Quality of Service (QOS), and security requirements.

The modern professional environment relies on multiple systems to work efficiently. By providing 100% solutions in each discipline, VT Group approaches each project as a whole solution where the network topology is considered holistically—this eliminates the need for complicated bridging between disparate systems. Items as wide ranging as the physical ports allocated to a block of offices, the bandwidth required for all Video Teleconferencing systems to operate concurrently, and the routing of networked security cameras have the potential to cause outages, frustration, and conflicts between multiple third party vendors. The VT Group approach reduces the failure potential of multiple interacting systems by aggregating them into a single system. Clients, such as MSI, can rely on the same VT Group team for all systems— from presentation displays to door locks.

VT Group

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