Case Study

Passive Optical LAN (OLAN) Design/Build

Future Proofing for tomorrow's technology needs

Client:

Universities Space Research Association (USRA)

Core Activities:

- Designed, built and installed a state-of-the-art "Future Proof" optical local area network with fully integrated data, VoIP, AV and electronic security systems for USRA's new facility.

- USRA acquired the entire building but their initial build only required 40% of the total facility. A technology was desired that would accommodate savings as the company grew and expanded into the rest of the building.

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VT Group is a global integrator specializing in commercial and federal design/build Information Technology systems that converge multiple platforms over a single shared infrastructure. VT Group was engaged by Cresa, an international corporate real estate advisory firm, to design and build the Information Technology systems for a new headquarters facility for Universities Space Research Association (USRA) in Columbia, Md. Cresa exclusively represents tenants and specializes in the delivery of fully integrated real estate services.

VT Group Engineers initiated a discovery phase with the USRA IT department and began preliminary design discussions aimed at an integrated network solution for their new building. USRA had clear objectives, a wealth of collaborative experience, and special knowledge of their industry workflow. In an effort to utilize existing network switches, USRA was initially interested in a traditional Ethernet copper-based infrastructure. As discussions went on, it became apparent that designing a new infrastructure around existing active Ethernet switches would solve only their short-term goal of moving into a new facility. When business growth required expansion it would be very costly to spread into the rest of the building. In an effort to future proof USRA and streamline their IT budget, VT Group introduced an alternative to copper based active Ethernet switching called Passive Optical LAN or OLAN. VT Group engineers provided a complete OLAN solution for the same upfront cost as the copper infrastructure USRA originally sought to install. The final OLAN design included fully integrated converged systems:

- **Information Transport Systems** - including Passive Optical LAN components such as the optical line terminal (OLT), optical network terminals (ONT), fiber optic network, fiber optic cable assemblies, demarc extension cabling and a data center build-out.
- **Audio Visual and Acoustical Systems** – including wireless control systems, HD video conferencing, audio teleconferencing, wireless presentation (Apple iOS, Android, Windows, OS X), air media, ceiling mounted microphones and speakers, AV enabled lecterns, 80" touch and typical HD displays, and high performance HD projection systems.
- **Electronic Security System** - including complete access control, intrusion detection, intercom, and IP based closed circuit television systems.

This converged technology integration provides USRA with wireless video presentation capabilities; provides multiple VTC spaces; allows employees to utilize technology-enhanced open spaces; and supports academic conferences with numerous presenters. The newly installed Passive Optical LAN solution accommodates USRA's immediate needs and facilitates network expansion as the organization grows. Compared to traditional Ethernet copper-based infrastructure, OLAN's scalability will save USRA an abundance of financial and human resources over the life of the network. OLAN will allow USRA to expand into the remaining 60% of the building as needed and will enable a seamless transition to a10gig platform when required as the major network investments have already been made.