

case study

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North American Spine Society and Spine Masters Institute

www.spine.org

Location:
Burr Ridge, IL

Vertical Market:
Healthcare

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PANDUIT Backs Premier Spine Education Facility with 10 Gigabit



Spine Masters Institute (SMI), Burr Ridge, Illinois

The Spine Masters Institute (SMI) located in Burr Ridge, Illinois is the North American Spine Society's (NASS) state-of-the-art medical education facility. It was developed to advance spine education for physicians and other healthcare professionals worldwide who want to increase their proficiency in hands-on surgical techniques, injection procedures and the latest medical and physical spinal treatment.

NASS is a multidisciplinary medical organization dedicated to fostering the highest quality, evidence-based, and ethical spine care. Since its establishment in 1985, NASS membership has grown to more than 4,800 members from several disciplines including orthopedic surgery, neurosurgery, radiology, physical medicine and rehabilitation, anesthesiology, physical therapy, and other spine care professions. NASS' member-driven programs include cutting-edge medical education, research grants, advocacy in legislative and regulatory arenas, clinical guidelines and practice management resources, publishing and patient information.

Originally located in three different locations, NASS purchased a 40,000 square foot building and surrounding area in early 2005 to consolidate operations and improve education and research. "Because we didn't have our own training space, we rented other facilities and traveled around the country to conduct training. We had a vision of building a state-of-the-art facility, which would allow us to advance spine care to new levels and save money by consolidating staff and providing on-site training at a central location," says Eric Muehlbauer, MJ, CAE, Executive Director for NASS.

The site for the SMI was chosen primarily for the location, which is 15 miles from Midway Airport and 25 miles from O'Hare International Airport. Situated on 4.5 acres and adjacent to a hotel to accommodate attendees and faculty, the new SMI facility was designed to include the latest systems, communications, and audiovisual technologies, all of which is driven by a *PANDUIT* networking infrastructure.



Technology for the new SMI facility was designed to include fourteen ceiling-mounted LCDs in the bio-skills lab to enable step-by-step surgical training.

The Challenge

NASS worked with a team of experts to completely renovate the existing 40,000 square foot building and design a bio-skills lab, state-of-the-art learning auditorium, contemporary function area, multimedia center, conference rooms, museum and offices to support the SMI and NASS headquarters.

The technology throughout the new SMI facility was designed to include fourteen ceiling-mounted LCDs in the bio-skills lab for participants to view step-by-step surgical procedures, and dual screens and projectors in the auditorium to show multiple inputs from cameras, laptops, DVDs, TV, and video feeds from the bio-skills lab. The facility also includes high-resolution recording and a comprehensive multimedia center for editing, storing, streaming, and viewing live and on-demand content from multiple locations, all of which support the goal of capturing pertinent media for distribution and training purposes.

With so much state-of-the-art technology being designed into the new SMI facility, NASS was challenged with implementing a network capable of supporting ample voice, video, and data for various advanced applications like large file sharing, video recording and broadcasting, automatic camera tracking, distance learning, facility-wide wireless and complete system control via touch panels.

“We needed the bandwidth to accommodate live and on-demand courses that would be digitally recorded and distributed in real time, as well as support distance learning, online meeting registration and other e-commerce transactions,” says Brad Repsold, Director of IT for NASS. “We also wanted to implement a network solution that would allow us to grow in the future without having to replace cabling.”

Criteria for Selection

Because NASS Board of Directors and member doctors are well versed in technology, they understood exactly what the network needed to support. As one of the largest initiatives ever undertaken by NASS, the project’s high visibility also required an installer capable of providing smooth implementation, staying within budget, and completing the project on time. After reviewing several bids, NASS selected *PANDUIT* Certified Installer (PCI) Communication Zone, Inc. and the *PANDUIT* networking infrastructure.

“The decision to choose Category 6A cabling to support 10 Gigabit Ethernet over copper was difficult. The technology was still new with limited installations. We wanted to ensure that it would perform, which made finding the right installer crucial,” says Brad Repsold, Director of IT. “We chose Communications Zone, Inc. because they had the most experience and a highly competitive bid for installing the *PANDUIT*® *TX6*™ *10GiG*™ solution.”

North American Spine Society and Spine Masters Institute

PANDUIT Preferred Products

TX6™ *10GiG*™ UTP Copper
Cabling System

DP6™ *10GiG*™ Angled
Patch Panels

PATCHRUNNER™ Vertical
Cable Managers

Fast Facts

NASS’ network includes:

- Facility-wide wireless
- On-demand video
- Full-service multimedia center
- 50,000 feet of *TX6*™ *10GiG*™ UTP Copper Cable
- 300 *TX6*™ *10GiG*™ network drops
- 22 *DP6*™ *10GiG*™ Angled Patch Panels



Dual screens and projectors in the SMI auditorium display multiple inputs from cameras, laptops, DVDs, TV, and video feeds from the bio-skills lab.

Why PANDUIT ?

“Our previous decision to implement Cisco equipment led us to *PANDUIT*; we knew that their products would work well together because of their business partnership,” notes Repsold. “The fact that the *PANDUIT*® *PATCHRUNNER*™ Cable Management System fit the facilities

aesthetic needs was yet another reason that we chose *PANDUIT*. Our data center is visible behind glass, and the management solution allows us to showcase the network. This is extremely important because we conduct tours on a regular basis and the facility prides itself on being high-tech. The complete *PANDUIT* package was a real end-to-end solution.”

Reliability was also a factor for NASS. The *PANDUIT* Quality Assurance System requires each *PANDUIT*® *TX6*™ *10Gig*™ Jack Module to undergo 90 individual quality checks during production and be 100% performance tested to meet 10 Gigabit Ethernet electrical performance specifications. All *PANDUIT*® *TX6*™ *10Gig*™ UTP Patch Cords and Cables are manufactured to strict quality controls and electrical performance verification, as well. The entire *PANDUIT*® *TX6*™ *10Gig*™ UTP Copper Cabling System is backed by an end-to-end 25-year system warranty with guaranteed performance compliance.

“In addition to providing an experienced installer and a complete end-to-end solution, we received superior service and support from *PANDUIT*,” says Repsold. “Communications Zone and *PANDUIT* worked very well together throughout the project, the strong relationship we’ve built with both companies ensures us that we can count on them for years to come.”

The PANDUIT Solution

With leading-edge copper and fiber cabling systems, cabinets and racks, cable management, fiber routing, grounding and bonding, managed systems, zone cabling, identification and a wide variety of tools and accessories, *PANDUIT* offers



In the data center, *PANDUIT*® *DP6*™ *10Gig*™ Angled Patch Panels and *PATCHRUNNER*™ Vertical Cable Management work together to provide NASS with the highest density solution available.

a comprehensive line of innovative networking solutions. *PANDUIT*'s commitment to innovation, quality, and service means that all solutions are designed to ensure the best performance, reliability and scalability for network integrity while providing easy deployment, flexibility, aesthetics and space savings for overall lower total cost of ownership.



With a data center visible behind glass and tours conducted on a regular basis, it was important for the *PANDUIT* cable management solution to fit SMI's aesthetic needs.

“Our PANDUIT® TX6™ 10Gig™ UTP Copper Cabling System and advanced audio-visual technologies have given us a lot more capability, putting us ahead of the curve for effective and efficient spine education.”

Eric Muehlbauer

Executive Director, MJ, CAE
North American Spine Society

“Our previous decision to implement Cisco equipment led us to PANDUIT; we knew that their products would work well together because of their business partnership. The fact that the PANDUIT® PATCHRUNNER™ Cable Management System fit the facilities aesthetic needs was yet another reason that we chose PANDUIT. The complete PANDUIT package was a real end-to-end solution.”

Brad Repsold

Director of Information Technology
North American Spine Society

NASS utilized the *PANDUIT® TX6™ 10Gig™* UTP Copper Cabling System throughout the entire SMI facility for both the backbone and horizontal links, requiring more than 50,000 feet of *TX6™ 10Gig™* UTP Copper Cabling. Each component of the system works together to exceed the electrical channel requirements of the 10 Gigabit IEEE standard 802.3an, providing alien cross talk and insertion loss performance up to 500 MHz for guaranteed 10 Gb/s data rate. While the facility's classrooms and labs each have their own dedicated audio-visual closet, the facility's 300 network drops terminated via *TX6™ 10Gig™* Jack Modules are each home run back to a main data center and terminated at *PANDUIT® DP6™ 10Gig™* Angled Patch Panels mounted in 2-post racks.



Left to Right: Eric Muehlbauer, MJ, CAE, Executive Director; William Popielarczyk, Network Administrator; and Brad Repsold, Director of Information Technology

"We have eight T1 lines coming into a main data center that houses approximately 25 servers and is scalable to support more. For power in the data center, we implemented a scalable overhead track busway system that allows us to snap on whatever amount of power we need," says Repsold. "We used the angled patch panels in combination with *PANDUIT* vertical cable management for greater density and room for growth."

At each rack in the main data center, NASS used *PANDUIT® PATCHRUNNER™* Vertical Cable Managers, which provide slack management, superior bend radius control, and cable support as they transition from the angled patch panels to the vertical pathway. The 22 *PANDUIT® DP6™ 10Gig™* Angled Patch Panels and *PATCHRUNNER™* Vertical Cable Management work together to provide NASS with the highest density solution available, up to quadruple the density over traditional patch panels.



NASS is currently running Gigabit speeds over their *PANDUIT® TX6™ 10Gig™* UTP Copper Cabling System and plans to migrate to 10 Gigabit as soon as the equipment is available. "We were running 10/100 Mbps over a variety of Category 5e components at our prior facility, which was not adequate for what we wanted to accomplish," says Repsold. "With our new facility and network, we have noticed a huge increase in speed when transferring files – it's night and day. We'll slowly begin to phase out Gigabit equipment and upgrade to new 10 Gigabit equipment as soon as possible. Within the next one to three years, we hope to be completely 10 Gig."

"With a network capable of providing the bandwidth we need to broadcast video, we have been able to expand e-learning opportunities like web casting and video conferencing, which is much more feasible for global members," concludes Executive Director Eric Muehlbauer. "Our *PANDUIT* networking infrastructure and advanced audio-visual technologies have given us a lot more capability, putting the North American Spine Society and the Spine Masters Institute ahead of the curve for effective and efficient spine education."

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