

Installation Profile: Carson Tahoe Medical Campus

NextLAN® CAT 6+ copper and premium fiber optic cabling selected to create state-of-the-art medical complex



Overlooking Nevada's pristine Eagle Valley, Carson Tahoe Medical Campus is home to several newly constructed health-care centers including Carson Tahoe Regional Medical Center, a 352,000 square-foot hospital, and Sierra Surgery & Imaging, a 49,000 square-foot surgical hospital. Before ground was broken or design plans penned to paper, it was resolved that the development would be outfitted with state-of-the-art medical equipment and communications services to support the existing needs and future vision. This decision has empowered caregivers – at the touch of a button – to access comprehensive patient records at the bedside or point-of-care, both to make decisions and take actions with greater accuracy and efficiency.



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> Each day, hospitals across the country generate volumes of network traffic and data. From medical records applications to diagnostic imaging systems, to administrative information, these services are essential for patient care. Yet, the massive streams of information transmitted over hodgepoded cabling systems can overwhelm the available network capacity, making it difficult for healthcare providers to quickly access information.

Carson Tahoe Optimizes Technology

In Carson City, Nevada, more than a year was spent formulating the roadmap to create a new voice, data

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and traffic network that is high-speed, scalable, flexible, and ultimately interconnects all buildings on the 87-acre campus. A Category 6+ cable system was selected for the horizontal. A singlemode and 50 micron multimode fiber optic cabling system was chosen for the backbone. And both systems were based on NextLAN solutions.

“We want to be a top-100 wired hospital,” said Chief Information Officer

Michael Blair, who oversees Carson Tahoe’s technology program. “This means, first, we needed to maintain the highest levels of network availability and reliability. And second, make sure that the technology we put in place helps support patient care. If we can provide excellent systems on which the nurses and physicians can get information to provide quality care, then we’ll have an excellent hospital.”

The Challenge

Blair acknowledges that the legacy communications network at the original Tahoe Carson hospital grew incrementally in a patch-work fashion during the past three years. It was dated and incapable of handling the considerably enhanced data traffic required for future growth. That, compounded with stringent state and federal hospital construction



guidelines, made it almost impossible to retrofit the existing buildings to keep up with ever-advancing medical trends.

All things considered, the obvious choice was to build the new medical campus and replace the existing system. For the new site, hospital officials created a technology dream list of sorts that would help them meet current and future goals, and then formed the systems around those ideas.

Moving forward, a single voice and data platform has been installed to support an all-digital film-less imaging environment, electronic medical records, computerized workstations, wireless connectivity, and Voice over Internet Protocol (VoIP) telephone system. “One of our goals is to create a 100-percent digital environment.” said Blair. “Obviously, that is a very bandwidth-intensive service. To create a reliable system, we needed a very strong and fast cabling network to transfer the images and data from place to place.”

The benefit of change is immediate.

Multiple new digital records management systems are helping doctors order diagnostic tests and view the results, chart patient information, track patient satisfaction, order and process medications as well as send, retrieve and store large images such as x-ray, radiology, cardiology, digital mammography that demand crisp clarity. Now, patient information can be accessed and healthcare decisions made by an authorized caregiver wherever there is a web-enabled PC.

As a non-profit hospital Carson Tahoe is always looking for ways to be prudent with its resources, and the NextLAN solution combined with a VoIP telephone system allows it to accomplish that goal. With VoIP, conversations are transformed into digital information and sent over a broadband data network. Unlike older VoIP systems, the new service provides greater voice clarity for conferencing, dialing the phone from a PC, and video chat.

Also, VoIP is creating extensive flexibility, allowing staff to place and answer calls from any location in the hospital using a wireless handset. The hands-free communications device permits mobile caregivers to instantly talk with other staff and patients via the in-room call system, in real-time.

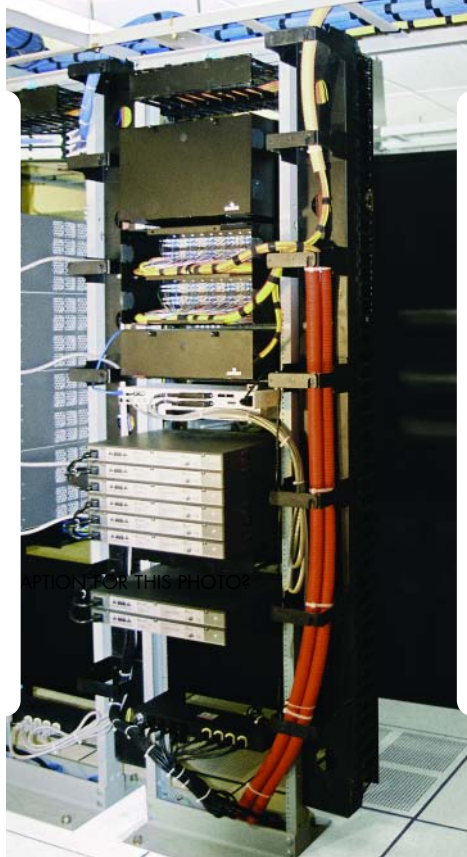
Selecting a Solution

With the hospital's wish list in hand, Pacific States Communications was hired to provide a comprehensive communications solution and install a voice/data network that would deliver Carson Tahoe the performance as promised. NextLAN systems fit the bill perfectly.

NextLAN systems are independently verified quarterly by Underwriters Laboratories (UL) to ensure accurate, unbiased performance. They are guaranteed to exceed the applicable TIA/EIA-568-B and ISO/IEC 11801 standards at the time of installation. And, NextLAN, one of the few solutions to offer a lifetime warranty, covers the permanent link, channel and inside building backbone as described in TIA/EIA-568-B (including connectivity).

"We have a long history using NextLAN products," said Rick Smith, Vice President of Operations at Pacific States Communications. "We use NextLAN because we know that when we install NextLAN products, we're going to get excellent test results." Pacific States Communications, an industry leader in telecommunications, provides customers with industry leading voice, data and structured cabling products that are installed and serviced by certified technicians. NextLAN systems are installed on the horizontal and backbone. For the horizontal, the NextLAN CAT 6+ solution combines the Leviton eXtreme™ 6+ jack and 200 Pair Rack Mount Wiring Panel with DataGain® cable from Superior Essex. DataGain's innovative design yields the smallest diameter Category 6+ cable available and provides more flexibility than comparable cables utilizing the cross web filler. And, because Leviton components are optimized to work perfectly with DataGain cable from Superior Essex, they provide reliable, no-risk performance in demanding, high-traffic networks.

Additionally, TeraGain® 50 micron multimode fiber optic cabling from Superior Essex provides greater bandwidths than standard multimode fiber and exceeds TIA 568. TeraGain, matched with Leviton's Fiber Optic Patch Panel and Rack Mount Fiber Optic



Enclosure, provides dependable data transmission along the backbone. Also independently verified by UL, TeraGain offers 500 MHz-km at 850 nm wavelength and 500 MHz-km at 1300 nm wavelength.

As an added NextLAN benefit, the fiber backbone is part of the NextLAN warranty program from Superior Essex and Leviton, and is included in the program offered through certified installers.

The Results

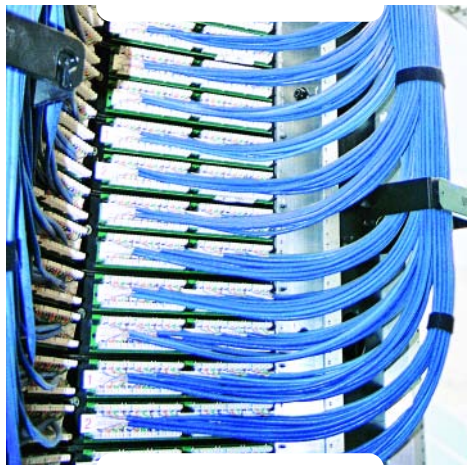
Together, 14 TR closets, 1.5 million feet of communications cabling, more than 6,000 data drops, and more than 125 wireless access points are installed at Carson Tahoe and Sierra Surgery & Imaging. The massive amount of wiring installed allows the

system to continue to grow and support the regional medical center as new buildings (onsite and offsite) are added to the network over time.

As the medical complex grows, the buildings will be interconnected to the main computer room at Carson Tahoe Regional Medical Center, which serves as the technology hub for all of its mission-critical operations throughout northern Nevada. When construction is completed, several free-standing buildings, including Sierra Surgery & Imaging, an accredited cancer center, a new central plant and several medical/administrative office buildings will be housed at the campus. Offsite, the network will serve a smaller inpatient hospital and several outpatient . The network will

facilitate all building controls such as security and HVAC controls at all locations.

From humble beginnings more than 50 years ago to a progressive and technologically developed hospital, with the help of NextLAN and Pacific States Communications, the Carson Tahoe Medical Campus communications network is now technologically sound for speed, bandwidth and reliability on mission-critical applications in the campus-wide environment.





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