

# Los Rios Community College District

NextLAN 6eX Copper and Fiber Cabling System  
Chosen for District Wide Infrastructure Upgrade

**NextLAN**<sup>®</sup>  
LEVITON<sup>®</sup> SUPERIOR ESSEX<sup>®</sup>



Each year nearly 80,000 students pass through the halls of the four colleges that comprise the Los Rios Community College District. The Los Rios District includes 152 buildings located throughout a 2,400 square mile service area. To prepare for an expected 25% increase in enrollment by the year 2010, Los Rios continues to invest substantially in both wide area network (WAN) and local area network (LAN) upgrades to keep ahead of the data demands of its faculty and student body.

performance without compromise

With the passing of a quarter billion dollar bond measure, California's 2nd largest community college district is currently in an aggressive expansion mode for new construction, renovations and technology enhancements District wide. One continuous area of technical improvement is the upgrading of the horizontal and backbone cabling physical layer for the district. The Los Rios Information Technology Department has standardized on the NextLAN cabling solution comprised of Leviton and Superior Essex copper and fiber optic voice and data products to meet Los Rios's networking needs.

### EVALUATING, CHOOSING AND DESIGNING

The Technical Services Division of the Information Technology Department has a relatively small, but highly skilled staff and has been very productive in handling a wide variety of technical responsibilities. To address the various challenges associated with designing the communications infrastructure for numerous buildings, each with a unique construction and its own set of cabling requirements, a specification team was assembled comprising of Los Rios Information Technology Department employees and consultants from Angus-Hamer Networking, a Northern California based consulting firm which specializes in intelligent building planning, design and implementation management services. With decades of experience in advancing networking technology, the four-person team was tasked with evaluating, choosing and designing the communications system for Los Rios.

"Because of the electronic nature of the Los Rios's diverse curriculum, it is imperative that a reliable cabling infrastructure design be implemented to support our dynamic network" Joe Kramer, Cable Plant Administrator for Los Rios. Mr. Kramer added, "The design team invited three well-known end-to-end cabling systems to give a one



NextLAN solutions are field-tested to guarantee performance that exceeds industry standards.

hour presentation addressing the merits of the proposed solution. The group unanimously agreed that the NextLAN solution offers the industry's best overall value when using performance, warranty and customer technical support as the criteria for evaluation."

Katherine McCreery, Telecommunications Systems Designer, credited guaranteed solution performance that is independently verified as the reason for choosing NextLAN for Los Rios. Ms. McCreery said "While most every cabling solution commercially available today offers some type of performance guarantee, NextLAN is unique in that system performance is verified quarterly by Underwriters Laboratories (UL) to meet published specifications."

### THE INSTALLATION

While Los Rios designs the networking systems, the installation and maintenance of the system is left to a select group of contractors whom are NextLAN certified. NextLAN installers are certified as part of a rigorous training program that has been designed by RCDD experts and has been continuously refined over the past eight years. As is the case with all projects, every permanent link in the system is thoroughly tested and documented by the certified installer, who submits all cable test result data to both the customer and the NextLAN team. Because of the contractor's certified designation, Los Rios is assured that the technicians are installing fiber optic and copper cabling in accordance with proper industry practices.

Using a certified installer also allows Los Rios to take advantage of the comprehensive and unique NextLAN warranty. NextLAN systems are backed by a lifetime performance, applications, product and labor warranty on certified horizontal and backbone systems. Furthermore, installed verification of permanent link performance provides automatic full channel warranty when Leviton patch cords are used.

By installing a qualified NextLAN cabling system, Los Rios automatically qualifies to receive the full benefits of the NextLAN Campus Warranty, which includes a 10-year warranty on all Superior Essex outside plant cabling (both copper and fiber) and a 15-year warranty on all Superior Essex voice-grade inside cabling that will be installed as part of the overall upgrade.

### THE BACKBONE

Universities require many types of telecommunications services because of their varied applications. To segregate traffic and to guarantee available bandwidth, the network

is divided into 512 secure virtual LANs. The backbone systems at the various Los Rios campuses are a physical star wiring topology.

Nearly 200 telecommunications rooms (TRs) connect the backbone and horizontal distribution systems via high-performance fiber optic cables. Depending on applications and requirements, the design team selected either a 24 strand singlemode or 24 strand multimode riser-rated indoor/outdoor water blocked tight buffer fiber optic cable from Superior Essex for the backbone portion of the network. The multimode fiber serves as the backbone fiber to support today's needs while the singlemode fiber positions Los Rios to take advantage of future technology offerings. Redundant singlemode and multimode links were also connected to the Gigabit backbone giving Los Rios not only a backup pathway during an outage, but also sufficient capabilities for future expansion and technological advances.

While some of the fiber has been installed indoors, a large quantity was buried outdoors so it was important the cable exhibited the necessary characteristics for both environments. Deryle Rowe, Angus-Hamer Consultant, cited value without sacrificing performance as the basis to specify this product. "The tight buffered configuration eliminates the transition splice associated with loose tube designs, thus saving Los Rios installation time and cost. Environmental extremes such as temperature, moisture and sunlight will compromise the integrity of the cable unless that cable exhibits the necessary mechanical protection. Because the specified Superior Essex product meets both Telcordia GR-20 water block and UL sunlight resistance requirements, Los Rios is assured that the cable investment is maintained over the life of the system."



Learning Resource Center, Sacramento City College



## THE HORIZONTAL

For the horizontal cabling infrastructure, Los Rios has standardized on the NextLAN 6eX cabling system to handle the high capacity data and video applications associated with the demands at an institution of higher learning. With a guaranteed 10 dB PS ACR headroom and a warranty that ensures installed performance will exceed TIA/EIA 568-B.2-1 specifications for all parameters swept out to 350 MHz, the NextLAN 6eX cabling solution is designed to support an exponential rise in data throughput.

In nearly 200 TRs and at nearly 20,000 work areas each with three active Category 6 outlet locations, Superior Essex NextGain cable is connected to Leviton eXtreme® 6+ patch panels and

connectors. The Leviton eXtreme 6+ connectivity utilizes its patented Retention Force Technology (RTF) and a unique pair separation tower to enhance performance. RTF maintains the pin positions of the jack while the pair separation tower assists the installer in that the pair does not need to be untwisted during termination. Not only does this save the installer time, it also maintains the design integrity of the cable ensuring performance is not compromised. Kramer

notes flexibility and future proofing as reasons for choosing three CAT 6 outlets at each work area. "A uniform scheme at the outlet gives us flexibility in that each of the outlets can be used for data or voice" said Kramer. Kramer expands "Additionally, using a premium Category 6 solution positions Los Rios to migrate towards a possible mass deployment of Voice over IP (VoIP) and Power over Ethernet (PoE) while maintaining a Gigabit Ethernet infrastructure." Currently Los Rios is evaluating VoIP and is powering a few wireless access points over the Ethernet cabling on a limited basis and an implementation of these technologies on a much broader scale is being evaluated for future consideration.

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# HIGH PERFORMANCE CABLING SYSTEMS



Superior Essex is one of the largest manufacturers of communications cable products in the world, and a market leader in datacom copper and optical fiber cables. With more than 50 years of experience in telecommunications cable design and production, Superior Essex Communications has built a reputation for delivering products that lead the market in terms of technology and quality. From Outside Plant (OSP) to in-building LANs, Superior Essex cables carry the voice and data traffic for the largest telecommunications service providers in the world as well as many of the leading enterprises throughout North America. Visit [SuperiorEssex.com/Comm](http://SuperiorEssex.com/Comm) to learn more.

#### **Superior Essex Communications LP**

6120 Powers Ferry Road, Suite 150  
Atlanta, GA 30339  
800.551.8948  
[SuperiorEssex.com/Comm](http://SuperiorEssex.com/Comm)



Leviton Network Solutions is part of Leviton Manufacturing, Inc., a 100-year-old company offering more than 25,000 products and devices for homes, businesses and industries. Today, the division is dedicated to producing network infrastructure systems for the enterprise, data center, government, health care, education, and residential markets. Copper, fiber and power solutions include structured cabling systems, enclosures, PDUs and much more. All Leviton products are engineered to exacting standards and offer guaranteed performance. For more information, visit [Leviton.com](http://Leviton.com).

#### **Leviton Network Solutions**

2222 222nd Street SE  
Bothell, WA 98021-4416  
800.722.2082  
[Leviton.com](http://Leviton.com)



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