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Special Higher Ed Issue

Wireless Technologies Help Keep Universities Safe and Secure

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Today's Wireless World™

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INDUSTRY OVERVIEW:

Wireless Technologies Help Keep Universities Safe and Secure

By Holt Hackney

The 2007 shooting at Virginia Tech shocked the nation and left a university devastated, causing administrators throughout the country, along with students and their parents, to take a hard look at safety issues on their own campuses.

In the aftermath of that tragedy, hundreds of colleges and universities have embraced or are considering text messaging systems that would notify students on their cell phones in case of an emergency. Meanwhile, other schools are equipping professionals who are responsible for security with advanced technologies on their smartphones and two-way radios. Some are even installing cutting-edge video surveillance systems and wireless call boxes.

Students, faculty, and staff have never been safer, thanks to wireless technology. Corrine Hoch, President-Elect of the Association of Communications Technology Professionals in Higher Education and an IT professional at Columbia University in New York, said recently that the Virginia Tech shooting "heightened our awareness" of additional ways to disseminate crucial information. In its wake, "a flurry of activity has ensued," she added, with colleges of all sizes evaluating their emergency communications needs.

Virginia Tech, for instance, wasted little time leveraging wireless technology, creating VT Alerts, a service that already has attracted more than 20,000 students, faculty, and staff at the school. VT Alerts operates by sending out a text alert, instant message, or e-mail message, or by making a phone call to as many as three devices selected by the subscriber. Countless other schools are following suit, embracing the power of such technology to save lives.

Universities and colleges are beefing up security in other ways by putting the latest cell phones and radios in the hands of their security staff. "It is vital that security personnel have reliable and robust communication tools," said Jerry Denham, President & CEO of BearCom, the largest products and solutions dealer and integrator in the wireless technology arena. "In recent months, we have definitely seen a strong uptick in demand from higher education institutions for Motorola and Icom two-way radios."

Chris Lougee, Vice President of Icom, added that the increase is demand may be related to enhanced products. "Colleges and universities are embracing Icom's IC-F3021 portable two-way radio as the next step up from most lower-end radios, as it has a good balance of features and price. For example, the F3021 has an LCD screen, which allows the radio user to see the name of the person or department that's calling or is to be called. A radio user who needs to contact campus security right away can instantly verify which channel to use by checking the LCD. The F3021 also has a powerful, yet lightweight Lithium-Ion battery for all-shift coverage, and it is MDC-1200 compatible, so it can be integrated into a legacy system using that common technology."

The attractiveness of these new devices has been enhanced recently with the introduction of various accessories, such as Peltor's extensive line of noise-reduction headsets, which block out extraneous sounds, and OTTO's speaker-microphones, which are renowned for their reliability, durability, and performance.

In addition to two-way radios, Motorola has been active on college campuses in other ways, such as its MOTOMESH product, which is a single wireless network that provides Wi-Fi access to the public, yet provides first responders with separate, dedicated, and secure access to mission-critical communications.

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"We have a seen a dramatic and continuing increase in the use of wireless video surveillance technology in higher education."

Mulli Diamant, Vice President of Sales
On-Net Surveillance Systems

After several tragic on-campus shootings, many colleges and universities have embraced text messaging systems to notify students on their cell phones in case of an emergency. Institutions of higher learning are also exploring wireless video surveillance systems, which not only enhance safety for students and faculty but help the school protect its physical plant and property as well.

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College campuses all over the world are embracing wireless technology in ways that were unimaginable just a few years ago. Take Taiwan's Tajen University for example. It recently installed a wireless mesh network provided by Firetide, one of the world's leading developers of mesh and access networks and a key BearCom partner. "Firetide provided the Tajen University campus with a carrier-class wireless network," said Dr. Lu Ching Song, a professor of multimedia Web applications and the wireless network project leader at Tajen. "The robust and affordable network supports a security system for our safety and provides free Wi-Fi access to our students and faculty. A key advantage of the deployment is that once purchased, it is completely reconfigurable to address changes in our security needs or the campus topography, such as the addition of new buildings."

In addition to providing Wi-Fi access to the university's 12,000-strong student population, the network supports 25 IP video surveillance cameras. A second phase will expand the reach of the system by equipping two university police cars with Firetide nodes for mobile access to real-time video streams.

"As universities here in the U.S. and throughout the world explore new and innovative solutions to provide more effective campus safety and better serve their student populations and staffs, Tajen University is an ideal model," said Bo Larsson, CEO of Firetide.

One of Larsson's counterparts at On-Net Surveillance Systems (OnSSI), another BearCom partner and the leading developer of intelligent IP-based video surveillance software, did not disagree. "We have a seen a dramatic and continuing increase in the use of wireless video surveillance technology in higher education," said Mulli Diamant, Vice President of Sales for OnSSI. "Once deployed, these schools quickly realize that video surveillance systems do more than just enhance the safety of the student and faculty population. These systems also protect the physical plant and property of the school. Wireless technology assures minimal disruption to the physical structure, greatly reduces implementation costs, and enhances the ability to push video alerts to appropriate personnel for immediate notification and response."

Diamant added that today's video analytic technology is a key component of many solutions and requires fewer resources to effectively monitor the school environment

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Two-way radios and push-to-talk cellular phones are being utilized on college campuses these days for much more than safety and security applications. Those wireless devices also function as a very powerful tool for increasing the efficiency and effectiveness of landscaping and maintenance personnel, since most of the individuals performing those tasks seldom work very close to a traditional wired phone.

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by focusing on the video streams themselves–and thus the events–that are most important to view.

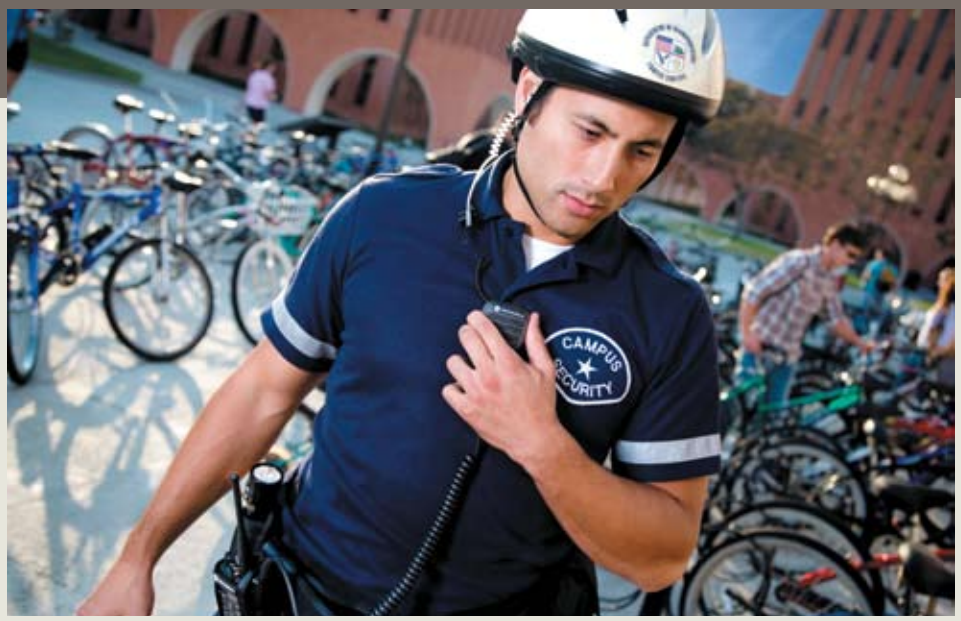
Another key BearCom partner has been Sony and its IPELA line of IP video surveillance cameras, which is the best of class among such products. BearCom selected these cameras for their superb imaging in both day and night lighting conditions; their integrated, impact-resistant, polycarbonate clear domes and aluminum die cast casings; and bandwidth-efficient MPEG4 codec. "The Sony IPELA cameras are the industry standard for IP video surveillance," said Mike Butler, Project Manager at BearCom. "Sony's expertise in imaging technology is long established, and its success in advancing this into the IPELA line with IP-based connectivity is helping speed the transition from CCTV to IP video security."

One of the most attractive byproducts of video surveillance networks is that they instill peace of mind and allow students to focus on the cultural and intellectual exchange, which is so critical on a college campus setting. "Enhanced security is a laudable benefit of today's wireless technology," said BearCom's Jerry Denham. "But the truth is that this technology can help the college fulfill its educational mission. For example, professors are increasingly using BlackBerry and Palm devices to facilitate their teaching processes, while students use those same smartphones for ready access to the Internet and their e-mail." ●

Holt Hackney is Managing Editor for Today's Wireless World magazine.

For more information about the wireless products and solutions discussed in this article, please contact BearCom at TodaysWirelessWorld@BearCom.com.

Institutions of higher learning are constantly faced with the need for improved workforce productivity, operational efficiency, and increased mobility, while maintaining constant connectivity with the workforce. The MOTOTRBO digital two-way radio platform was designed to meet the needs of colleges and universities that require reliable, mission-critical communications combined with the higher performance capabilities that only digital technology can provide.



PRODUCT REVIEW:

Higher Education Finds Efficiencies through MOTOTRBO

By Hugh Johnston

The days when managing a college campus was a relatively simple affair are long gone. Today's institutions of higher learning are big businesses that require coordinated maintenance and security. Hundreds, sometimes thousands, of workers shoulder the burden of making sure the institution's highest objective–educating students–is not disturbed. That's where Motorola's MOTOTRBO digital two-way radio system comes into play for progressive universities.

The wireless technology leader introduced a powerful and compelling improvement on the industry's existing platforms when it launched MOTOTRBO last year. In addition, Motorola has made it possible for colleges and universities that remain wedded to analog technology to take small, cost-efficient steps toward the inevitable transition to digital. They are not twisting arms or forcing upgrades to be made.

There are plenty of compelling reasons to make the switch, though. Motorola's new digital communications platform combines the best of two-way radio with digital technology to deliver increased capacity and spectral efficiency, integrated data applications, and enhanced voice communications.

"A major leap in two-way radio communications such as this typically comes around only every couple of decades," said Mike Butler, Project Manager at BearCom. "What is impressive to me is the IP connectivity. You expect the voice quality with these radios, but what is stunning about them is that they move data equally as well. For example, you can send text messages directly to one or more radios. We're already seeing a different kind of reaction when we call on customers and prospects and discuss this platform."

MOTOTRBO utilizes a two-slot Time Division Multiple Access (TDMA) digital technology to improve basic functionality and system performance, including increased system capacity, improved audio quality, longer battery life, built-in privacy, and enhanced call signaling and control capabilities for future enhancements to the platform, such as emergency pre-emption. In addition, users have access to various integrated data applications, such as global positioning system (GPS)-based location tracking, text messaging, and other IP data applications. And it doesn't end there. Motorola's published Application Programming Interface (API) enables the development of customized applications by third-party developers, creating additional versatility for all MOTOTRBO owners.

"That's another thing that's very exciting about MOTOTRBO," said Butler. "Yes, you have the GPS application with text messaging and an e-mail interface. And yet you also have an open API. Developers can get a kit from Motorola just like you would from Microsoft, so that they can write a variety of applications (for the platform)."

The integrated applications and the ability to write additional applications represent the real sizzle of the MOTOTRBO platform. A couple of these applications–GPS and text messaging–are very powerful. But Motorola is also working on many, many more applications. Those features

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One of the most powerful aspects of MOTOTRBO is the menu of versatile accessories that allow the user to realize the technology platform's full potential. Among the accessories–which are in stock and readily available from BearCom–are speaker-microphones from Motorola,

noise-reduction headsets from Peltor and OTTO, multi-bay chargers from Advanced Charger Technology and IMPACT Radio Accessories, and replacement batteries from Motorola and Honeywell. Beyond the existing line of accessories, MOTOTRBO is also on a path of versatility. With its open API, developers can get a kit from Motorola–just as they would from Microsoft–and develop custom applications that will enhance the functionality of MOTOTRBO, making this platform a very smart bet for the future.

and the many others will go a long way toward attracting institutions of higher learning to upgrade their existing wireless communications platforms.

"Colleges and universities are constantly faced with the need for improved workforce productivity, operational efficiency, and increased mobility, while maintaining constant connectivity with the workforce," said Butler. "MOTOTRBO was designed to meet the expanding needs of these customers, especially those requiring reliable, mission-critical communications combined with the higher performance capabilities that digital technology can provide."

Many colleges and universities also can benefit from the increased capacity and significant cost efficiencies that are inherent to MOTOTRBO. For example, by leveraging TDMA technology, MOTOTRBO doubles the effective capacity of a customer's repeater channels within the 12.5 kHz channel structure already utilized throughout the world.

This straightforward re-use of spectrum allows more users on the system with no changes to licensing requirements, which can increase the customer's capacity for wireless voice and data communications.

In addition, MOTOTRBO's platform enables a single repeater to deliver the benefits of two analog repeaters, allowing schools to realize up to a 50 percent reduction in repeater costs compared with equivalent analog systems. And MOTOTRBO provides a longer talk time with up to a 40 percent greater battery life than comparable analog radios.

MOTOTRBO lowers acquisition and operating costs, particularly when compared to alternative technologies that require monthly fees. In addition to a lower total cost of ownership, MOTOTRBO can operate in both analog and digital modes, and it is easily integrated with legacy two-way radio infrastructures. Customers can improve basic functionality, add new features, and increase capacity at their own pace, while leveraging existing system investments.

What's more, Motorola is hardly resting on its laurels. In addition to the MOTOTRBO platform, it recently announced the availability of a new two-way portable radio, the BC130.

"The Motorola BC130 was designed specifically to meet the rigorous demands of users for whom two-way radios are a critical tool for day-to-day efficiency," noted Andrew Byrne, a Vice President at Motorola. This new device, which is being offered exclusively by BearCom, is already being hailed in various industries for its exceptional audio quality, durable design, and competitive price point.

With industry-leading technologies like the MOTOTRBO platform and the new BC130 radio, it's not surprising that Motorola has been, and continues to be, a favorite at institutions of higher learning all across the country. ●

Hugh Johnston is Purchasing Manager for BearCom.

For more information about the wireless products discussed in this article, please contact BearCom at TodaysWirelessWorld@BearCom.com.

Motorola Two-Way Radio Batteries

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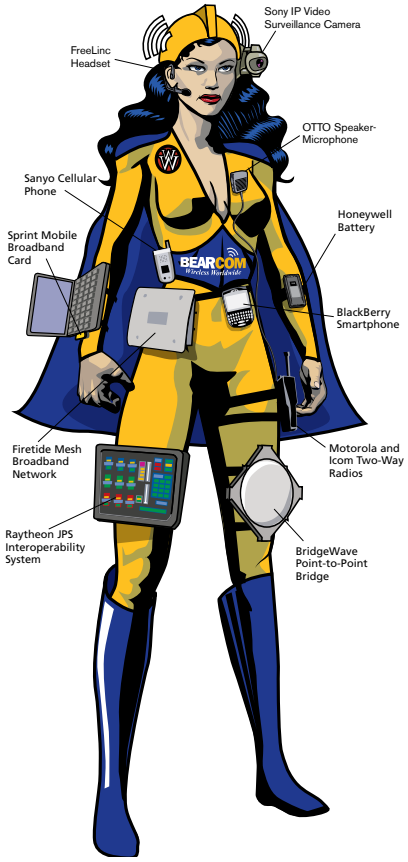

Meg A. Hertz, the Chief Technology Officer for BearCom, provides innovative wireless solutions to BearCom customers every day. But when a communications problem requires superhuman powers, Meg becomes Wireless Woman–and always saves the day!

Q&As:

Wireless Call Boxes and EV-DO Mobile Broadband Cards

By Wireless Woman

Question:

Our students, faculty, and staff use our facilities day and night. We have a lot of open areas on our campus where we can't support wired call boxes, but we want to create a safer environment. Can you suggest a solution?

Answer:

Your concern is quite understandable. According to statistics from the Bureau of Justice, almost 25 percent of violent crimes on college campuses occur in open areas, while only 9 percent take place in parking lots and garages. Responding to this trend can be a challenge, since universities rarely have the infrastructure–such as power or phone lines–in the middle of open areas to do much about it. This is where the wireless call box comes into play.

BearCom, the industry's leading provider of wireless technology solutions, has seen a dramatic spike in demand for these wireless stations, which offer a swift, reliable way to communicate from isolated locations. The beauty of these stations is that they are very simple to operate. Some feature "push-to-talk/release-to-listen" buttons on the exterior of the call box, while others are used by opening the box and speaking into a small telephone handset. Both systems are simple and straightforward.

Getting power to these devices is getting easier, too, thanks to the use of alternative energy sources such as solar panels. This power can translate into an arsenal of features that contribute to safety. The use of some call boxes, for example, will trigger flashing lights, drawing attention to the area around the call box and scaring away a would-be criminal. Having that power also enables features like automatic location identification or mapping, which allow authorities to quickly find and make their way to dangerous situations.

The locations for the call boxes should be chosen carefully. At one university, the campus police chief, head of residence life, dean of students, and head of facilities management worked together to determine the proper locations of the devices. The police chief said, "We put an aerial view of the university on the table and marked where the

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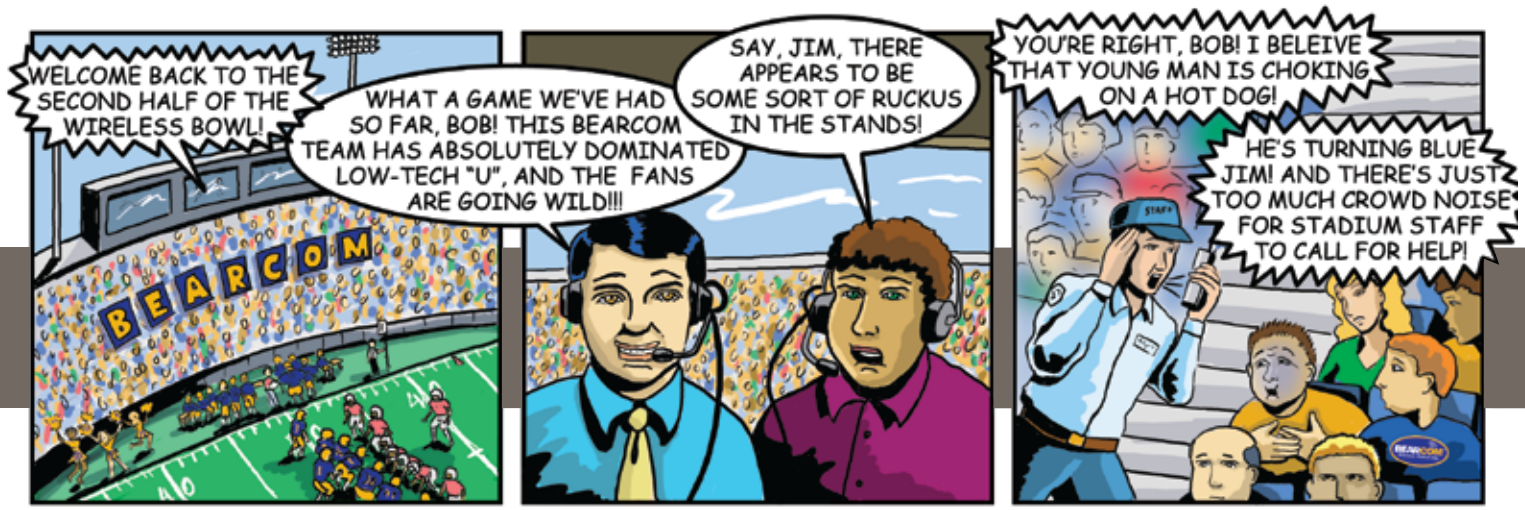
The Adventures of Wireless Woman™



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best placement of all of these would be, based on all of our discussions regarding where things could happen." In addition, they worked with a system integrator, such as BearCom, to confirm that the devices would be able to communicate from all the preferred locations. This is no small concern, since tree foliage can absorb a radio's frequency signal and reduce its range. When making such determination, colleges should conduct their site surveys in the spring when the trees are in full bloom and are at their greatest potential for blocking radio signals.

Wireless call boxes aren't just for open areas. Companies such as AdvanceTec Industries are introducing wireless call boxes for the classroom. These communications tools are discrete, yet powerful, giving students, professors, and staff the ability to press a button and alert the proper authorities in case of an emergency.

In concert with companies like Motorola and Sprint Nextel, AdvanceTec has launched a system that provides extensive functionality, such as remote "listen-in" capabilities, interoperability support, and accompanying software that allows the administrator responsible for monitoring the system to pinpoint the exact location of the call and to send help immediately.

Question:
The wireless network on our campus experiences sluggish periods thanks to students who consume a tremendous amount of bandwidth. This can be frustrating for our professors, who have come to rely on the Internet as a teaching tool. Is there a good alternative we can offer to both our students and professors?

Answer:
There surely is. Sprint and its EV-DO mobile broadband cards can help these users bypass increasingly crowded campus wireless networks and get online more easily and much faster.

Sprint–also a leader in providing cellular and broadband services to small and medium-sized businesses–is perfectly situated to offer these mobile broadband cards after recently upgrading its wireless broadband network to the faster EV-DO "Revision A" technology.

EV-DO also can be very useful for transmitting high-quality video and synchronizing large amounts of data between mobile devices and central systems. This can be very beneficial to professors, who need this capability to engage their students with videos or procure data for preparing their next class lecture.

In general, mobile broadband cards benefit users by allowing them to:

- Stay in touch via notebook computer or handheld device
- Go wherever they want and get online whenever they need to
- Connect to the Internet up to 10 times faster using EV-DO technology
- Increase productivity and efficiency
- Extend current and new applications to their mobile workforces
- Ensure security with authorized-only access
- Save money by eliminating Wi-Fi fees in hotels, airports, and other facilities
- Empower themselves and their workforce with true wireless mobility

BearCom's Hugh Johnston said recently that BearCom has seen a "tremendous interest in this technology and its ability to make certain business applications more valuable to the business user." He added that, as colleges encounter more and more power users among students and professors, they will likely want to encourage such users to connect to the Internet in other ways. ●

Wireless Woman, a.k.a. Meg A. Hertz, is Chief Technology Officer for BearCom.

For more information about the wireless products and solutions discussed in this article, please contact BearCom at TodaysWirelessWorld@BearCom.com.

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SUCCESS STORY:

University of Southern California

By Kristin Kirkham

The Customer

Located in the heart of downtown Los Angeles, the University of Southern California (USC) first opened its doors in 1880 to 53 students and 10 teachers. Almost 130 years later, the world-class private research university is now home to more than 33,000 students and the 3,200 full-time faculty members who support its undergraduate and graduate schools, as well as its 17 professional schools. USC has risen to the top one percent of all colleges and universities in terms of selectivity and has established itself as a world leader in the fields of communication, multimedia technologies, and the life sciences.

The Challenge

For more than 15 years, BearCom has provided two-way radios to USC's Operations & Game Management (O&GM) team for its various athletic facilities, including the LA Memorial Coliseum—home of the USC football team—and the Galen Center—home of the USC basketball and volleyball teams. The O&GM team is responsible for crowd control, the ticket takers, and overall game management for each event, and the logistics associated with those responsibilities can be daunting. The university has utilized the radios it purchased from BearCom to help perfect its security and operations efforts—on the field and court, as well as off. But occasionally, when a large event is scheduled to take place at one of USC's venues, additional radios are needed to properly equip the influx of extra staff.

The Solution

To help handle the increased need for two-way radios at large events, the O&GM team at USC always turns to BearCom for the short-term rental of additional units. Even when an event deadline is looming, BearCom is able to provide the university with as many radios as is needed, often up to 100 at a time. Recently, the university has committed to upgrading the security and communications equipment for USC's various venues. With BearCom's ability to provide custom-tailored solutions, such as digital two-way radios, wireless mesh networks, and video surveillance cameras, USC will have plenty of effective options from which to choose.

The Results

USC and the O&GM team have been very pleased with BearCom's products, services, and support over the years. "It isn't enough to just have a dependable radio anymore. We need to know that if there are any issues, we have someone who can be at the Galen Center or the LA Coliseum to help at a moment's notice. BearCom has supported USC for more than 15 years, and we couldn't imagine having a better relationship with anyone else," said John Henderson, Assistant Athletic Director of Operations & Game Management at USC. ●

Kristin Kirkham is Marketing & Technical Writer for BearCom.

For more information about the wireless products and solutions discussed in this article, please contact BearCom at TodaysWirelessWorld@BearCom.com.

"BearCom has supported USC for more than 15 years, and we couldn't imagine having a better relationship with anyone else."

John Henderson
Assistant Athletic Director of Operations & Game Management
University of Southern California

USC has more international students than any other U.S. university and offers extensive opportunities for internships and study abroad. With a strong tradition of integrating liberal and professional education, USC fosters a vibrant culture of public service and encourages students to cross academic and geographic boundaries in their pursuit of knowledge.

Warning: This Ad Contains Strong Language.




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in the business, and our wireless experts number more than 400 **strong**. Simply put, we're **strong** medicine for all your wireless communications needs.

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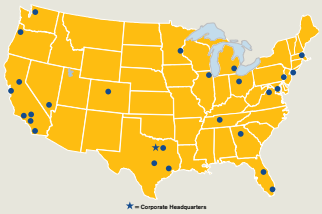



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