



## Southern Adventist University Unplugs Student Phones with ADC

### CASE STUDY

With roots dating back to 1891, Southern Adventist University (SAU) in Collegedale, Tennessee is the largest Seventh-day Adventist undergraduate institution in North America. The school's emphasis on affordability, value, and the spiritual environment of the campus have lead to steady increases in enrollment, and some 2500 undergraduate and graduate students currently attend classes led by approximately 500 faculty and staff. Among specialty disciplines at SAU are the School of Nursing, School of Religion, School of Visual Art and Design, a Social Work program, and a School of Business and Management.

Like all universities, SAU seeks to provide a safe and productive learning and living environment for its community. With the universal adoption of cellular telephones on campus over the past few years, the school's IT staff recognized that cellular coverage was a problem. In the housing halls in particular, students had trouble making calls reliably. Now, SAU is relying on ADC's InterReach Fusion® in-building cellular antenna system to deliver strong, consistent coverage in these facilities.



## Convenience, Costs, and Safety Drive Deployment

SAU's administration first recognized that cellular coverage inside student residential halls was weak in 2005. The nearest macro network cell towers were miles away, and the concrete block construction of the buildings weakened these outdoor signals enough to block quality service in many locations.

At the time, the dormitories featured wireline telephones in every student room, so the lack of consistent coverage wasn't a key concern, but when a 2006 survey showed that 96 percent of students had cell phones, the university decided to plan for elimination of wireline telephones in student housing. Eliminating the phones would save considerably on support costs for the campus-operated telephony network and voicemail system.

Before disconnecting the wireline phones, however, the university's IT department wanted to be certain that students could always make calls from inside their rooms, and that parents, faculty, friends, and public safety officials could always reach them if needed. "We don't want to force students to go outside the building to make or receive clear calls, and it was also a security issue that we be able to reach them in an emergency," said Doru Mihaescu, associate director of Information Systems at SAU.

## InterReach Fusion Offers Scalable Deployment

After the results of the cellular phone survey came in, the university quickly decided to explore ways to improve cellular coverage inside student housing. Mihaescu contacted all of the major cellular carriers in the area, and ADC and other vendors made proposals. By the spring of 2007, the university approved going forward with the project, and selected ADC as the vendor.

"We chose ADC because their system supported both 850 MHz and 1900 MHz frequencies with one set of electronics, so we could support all of the major carriers," says Mihaescu. "This allowed us to save money on the cost of equipment and it also made deployment a lot simpler. Since the Fusion system uses an active distribution system, we could place the main hub inside our telecommunications room and distribute cellular signals over existing fiber to the three buildings we wanted to cover."

Another advantage of the Fusion system was its use of thin coaxial cabling to link distributed antennas to the rest of the system. Because the cabling and antennas are easy to deploy, the university was able to use its own technical staff to do the installation.

To install the system, the SAU staff deployed roof-mounted antennas on Wright Hall, a centrally-located building that houses the university data center, president's office, and student center. These antennae capture signals from the macro network and direct them to bi-directional amplifiers (BDAs) mounted in the telecommunications room adjacent to the data center. The BDAs are connected to two InterReach Fusion Main Hubs for distribution across campus.

From the Main Hubs, cellular signals travel via existing underground fiber to Thatcher Hall and Thatcher South (the women's dormitories), and to Talge Hall (the men's dormitory). In these buildings, a total of eight Fusion Expansion Hubs convert the optical signals for distribution over CATV cabling to approximately 45 ceiling-mounted remote antenna units. Each antenna unit is approximately the size of a fire alarm sensor or Wi-Fi access point, so the deployment is relatively unobtrusive.



Thanks to its Ethernet-like, hub-and-spoke architecture, the Fusion system was easy to deploy without significant disruptions to school facilities. "Our own staff did the installation and they got pulled away for other projects from time to time, so that extended the total deployment time," says Mihaescu. "But we really could have done the installation a lot faster. We had excellent service from ADC; whenever we had questions or needed parts, we never had to wait."

When the system went live, students immediately noticed the difference, and SAU was able to move ahead with its plan to decommission the wireline phone network in the dormitories, a process that will occur over the summer of 2009. "The system has been completely reliable since we turned it up," says Mihaescu, "and it has been great working with ADC. We are now thinking about the possibility of scaling the system to improve coverage in other buildings on campus."

Thanks to ADC's InterReach Fusion system, Southern Adventist University has been able to respond to student preferences for cellular phones, improve its public safety infrastructure, and eliminate some of the support costs associated with a legacy wireline telephone system. Students are often the earliest adopters of new wireless technologies, and with ADC, SAU has been able to keep pace.

## Challenges

- Poor coverage inside campus housing
- Need to support multiple major carriers
- Desire to reduce costs by having university staff install the system

## Solution

- High-performance in-building wireless system eliminates coverage and service problems in student housing
- One system supports services for all major carriers in the region
- Easy, cost-effective deployment via existing fiber links to new buildings and thin cabling inside buildings

CASE STUDY



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