
Case Study
Education

Icom America Systems



Hunter College

Using IDAS™ to interconnect five
Manhattan campus locations



A case study prepared by Icom America Inc.
Manufacturers of high-performance, award-winning radios for over 55 years.

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ESS, Inc. integrates wireless two-way radio communications and IP, computer networks, & access control specializing in radio interoperability, wireless broadband, and surveillance for government agencies, universities, hospitals, utilities. ESS covers NJ, NYC, Long Island, NY Metro area.



Featured Products:

- IDAS F4161D Portables
- IDAS FR6000 Repeaters

Maintaining Safety in a Crowded Urban Setting

Founded in 1870, Hunter College is the largest college in the City University of New York (CUNY) system. Comprised of five distinct campus locations geographically dispersed across Manhattan, the college serves 23,000 students pursuing undergraduate and graduate degrees in more than 170 different programs of study.

While maintaining a safe and secure campus is imperative for any college or university, Hunter College's highly urban environment and multiple campus locations add an additional layer of complexity to the task. Essential to protecting Hunter College's the students and staff is the ability to contact personnel located throughout Manhattan at the press of a button. Instant, direct communications can help prevent incidents, and in the case of an emergency, college officials can respond quickly and efficiently.

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— Louis Mader, Hunter College Director of Public Safety

“Instant communication is vital to our role on each of the campuses,” says Louis Mader, Director of Public Safety for Hunter College. “We oversee the safety of five campuses and 23,000 students in Manhattan's crowded, urban setting. Two-way radio provides instantaneous communication with our personnel, which allows us to respond quickly.” Hunter College's Public Safety Department, comprised of 135 employees, oversees law enforcement, EMT and fire response across all five campuses.

Coordinating operations across multiple campus locations also poses a unique challenge for Hunter College's Administration, Facilities Management and Information Technology Departments, who oversee personnel and activities at multiple campus locations. In addition, college administration must stay up-to-

date on localized traffic conditions, special events and emergency situations that could affect the college's regular operation. For example, President Obama's 2010 surprise visit to Manhattan gnarled traffic and caused severe delays and detours to subway and bus routes, requiring increased security and class cancellations at a moment's notice.

Traditional Solutions Prove Cost-Prohibitive

Recognizing the critical role of reliable communications in ensuring student safety, Hunter College began investigating different solutions capable of connecting all five campuses in a single system. The solution had to provide reliable coverage across Manhattan's urban landscape as well as exceptional in-building coverage, even in difficult-to-reach underground areas.

The solution also needed to support highly secure communications. With its previous UHF analog conventional system, the college shared bandwidth with other users, which compromised the security of the Public Safety Department's communications, Mader says. "One block in either direction from our campus, we would lose our signal or be trampled by another user," he explains. "We wanted a privately controlled system so we wouldn't have to share bandwidth with other users."



The final impetus for upgrading to a new communications system came from the FCC's looming narrowbanding deadline, which requires all VHF and UHF land mobile radio users to migrate to at least 12.5 kHz channels by Jan. 1, 2013. "The [FCC narrowband mandate] wasn't our primary motivation for looking for a new system, but it provided the push the college needed to approve funding for the project," Mader says.

While a conventional radio system could easily provide reliable two-way communication across Manhattan, a traditional system would be cost-prohibitive. An IP-based system, on the other hand, would be affordable, but a previous effort at implementing a pure IP system failed to provide the reliable, high-quality communications required by the school.

A Single Solution for Multiple Locations

Hunter College contacted Joanna Harrington, Senior Account Manager at ESS Inc., to look at other alternatives. She recommended a hybrid system consisting of an Icom IDAS conventional voting system on the main campus, connected via IP to remote campus sites. Cost-effective and cutting-edge, the solution would satisfy the college's need to link its multiple campus sites with a reliable, high-quality communications solution.

Initially conceived as a solution exclusively for the Public Safety Department, Hunter College administrators quickly saw its potential for boosting organizational efficiency across the college's various departments. An IDAS conventional voting system would provide full coverage across Manhattan while solving the dilemma of extending coverage indoors, especially in the underground areas near subway tunnels.

Different departments could share the system, and public safety would still have the dedicated, secure channels it required. Finally, an Icom digital 6.25 kHz IDAS system, would provide a future-proof solution exceeding FCC narrowband standards that easily could be expanded or upgraded to meet the school's future communications needs.

After a demonstration of the IDAS system in the ESS Field Staging Facility and an on-site demo of Icom's F4161D digital portable radios, Hunter College decided to implement a new hybrid IDAS 6.25 kHz digital two-way radio system. What sealed the deal for Hunter College, however, was the simplicity of the purchase process, Mader says. "The ease of procurement by using the state contract sold me. We didn't have to go through a formal bid process. It was simple."



Unique Hybrid System Combines Voting and IP

Hunter College's new system is comprised of a conventional voting system on the main campus, with IP connections linking the four remote campus sites. Four repeaters provide full coverage for Hunter's five campus locations across Manhattan Island. An additional three repeaters inside the main campus building at 68th and Lexington provide reliable in-building coverage throughout the large facility, including the difficult-to-reach underground areas near the subway tunnels.

Icom's exclusive support of voting capability over IP allowed Hunter College to install a voting system on the main campus — alleviating coverage problems in the building's underground area beneath the subway tunnel — while cost-effectively providing coverage across a wide geographical area.

Hunter College selected the IAS 100DV repeater — a powerful 100 watt, 100 percent duty cycle repeater — to make sure its signals could reach the remote campus locations. The IAS 100DV repeater easily penetrates the heavy steel and concrete structures of New York City, and its 100 percent duty cycle ensures reliable communications for the Hunter College Public Safety Department, which is deeply committed to the protecting the safety of each student and staff member. The IAS 100DV repeater is offered in both standard commercial and public safety versions to meet the varying needs of the marketplace.



A backup power source provides redundancy, ensuring the system will continue to function during power outages, like the recent 36-hour power failure in New York City. Unlike commercial cellular networks that are dependent upon the power grid for operation, privately controlled IDAS systems connected to an emergency power source will continue to function indefinitely during citywide emergencies or natural disasters.

“The new IDAS system allows us to communicate directly with all five campuses. We can communicate with the other campuses from our location, and they also can communicate directly with each other.”

— *Louis Mader, Hunter College Director of Public Safety*

The system includes 205 IDAS F4161D digital portable radios used by Hunter College’s Administration, Athletics, Information Technology, Facilities Management and Public Safety Departments, as well as the college’s associated high school. The college allocated five talk-groups a piece to Public Safety and Facility Management. An additional four talk-groups are used by Athletics, Administration, Information Technology and all call.

IDAS Shores up Privacy, Extends Coverage

The new IDAS digital system successfully solved Hunter College’s dual needs of extending coverage across Manhattan and inside its facilities, as well as beefing up the privacy of its Public Safety communications. The new radio system also brought the college into compliance with FCC narrowbanding requirements.

“The new IDAS system allows us to communicate directly with all five campuses,” Mader says. “We can communicate with the other campuses from our location, and they also can communicate directly with each other.”

By opting for a private system, the college secured exclusive use of its radio frequencies. Digital IDAS technology offers the additional benefit of built-in enhanced encryption, preventing unauthorized community members from monitoring communications of the College’s Public Safety Department.

According to Mader, the system is performing as promised. It provides dependable, direct communications across a wide geographical area, defying the odds in Manhattan’s overly saturated RF airwaves. Digital receiver voting also helped clear up marginal coverage areas inside Hunter College’s facilities at minimal cost.



“Our main campus is on the east side [of Manhattan] at 68th and Lexington. With the new system, I can talk directly to an officer 25 blocks away at the 94th and Park campus,” Mader explains. “I can also talk to the dorms and nursing facility located at 25th and 1st, 45 blocks away.”

IDAS: A Cutting-Edge Solution for Colleges and Universities

Icom’s digital IDAS technology offers an ideal solution for colleges and universities looking to expand communications to extension campuses and other off-site locations. By combining voting capability and IP connectivity in a single factory-certified solution, IDAS offers the possibility of extending coverage across a wide geographical area while ensuring reliable, in-building coverage inside large facilities. Icom’s IDAS solution is the only factory-certified solution available today offering voting capability and IP connectivity.

Based on the NXDN common air interface, digital IDAS technology exceeds current FCC narrowband guidelines and provides crystal-clear audio clarity. It offers a highly redundant solution independent of a commercial cell phone or landline network, which can easily become overcrowded during emergency situations or go down during power outages.

With a full range of IDAS digital equipment, including new entry-level, mid-range and high-end portable and mobile radios, colleges and universities are certain to find an Icom solution to meet their unique communication needs.



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