



TAMU's Texas-Sized Access Control System Design Provides Significant Savings.

Texas A&M U's new access control system uses biometrics, gateway devices, domain software & other innovations for campus security.

For Immediate Release

Contact: Tracie Burton
Marketing Coordinator
Matrix Systems, Inc.
800.562.8749 x2891
<mailto:sales@matrixsys.com>

John Parris Frantz
J.P.F. Communications
(773) 871-2600
John@jpfcomm.com

College Station, Texas—(March 3, 2008) Retrofitting the world's largest contiguous college campus's access control from a financial-based ID card system to true enterprise access control security was no easy task for Texas A&M University (TAMU), College Station, Texas.

Although the campus has over 200 academic buildings sprawled across many square miles that includes a veterinary research park, farms, and an airport, the TAMU access control review committee specified a centralized system that also innovatively enables decentralized control where needed. Careful research helped the committee choose the latest technology to accomplish state-of-the-art access control while also avoiding additional implementation expenses through several innovative cost-saving measures.

One thing is for sure, the centralized style access control system TAMU arrived at after several years of comprehensive procurement and implementation is without peer in the university world. Other universities typically operate an evolving building-by-building collection of incompatible systems throughout their campuses which leads to expensive operation, renovation, and expansion costs, according to Lance Parr, lead systems administrator, TAMU Telecommunications Department; and Ronnie Schultz, building access supervisor, TAMU Physical Plant Department—Facilities Maintenance; both who helped spearhead the university's new access control system. Unlike other university access control systems which are typically fragmented among different vendors that are commissioned for each new building phase, TAMU was able to put its entire system under one united system.

The university's one centralized system uses Matrix Systems, Dayton, Ohio, equipment, but through domains offered by Matrix's Windows® Frontier™ software package, each department can implement a decentralized and personalized approach. Thus, academic departments have the unique capability to view and control access in



their own buildings (or domains) which TAMU feels is most effective. Besides the most common function of residence hall doors, card readers at TAMU now operate everything from parking lot gates and biological hazard suites to computer labs, classrooms, offices, and radiation freezers. “Through the use of domains, each department thinks they have their own software even though its part of our centralized system and we’ve tailored it so they can only view and control their own respective access lists, doors and schedules,” said Parr. “This eliminates the need of one centralized office doing nothing but administrative access all day. Also we feel individual departments know their students more personally and can grant or deny access more judiciously.”

The decentralization becomes as sophisticated as required via the software’s multiple calendar and access loop functions. For example a science building might have several layers of access—the building itself, instructor offices, general classrooms, and laboratories. Science building administrators can not only control access by person, but also by times throughout the day or the calendar year.

The Matrix system also allows for many customized approaches such as biometrics. Since access cards can be lost or stolen, sensitive locations depend on biometric hand scan readers by Bioscrypt[®], Sunnyvale, Calif., and Ingersoll Rand, Montvale, N.J., hand geometry readers for access control security.

Many access control software programs today are designed for airports, factories, or office buildings where everything is administrated and controlled by a centralized security group. Conversely, TAMU sought an access control program it could customize into the more decentralized approach through domains, which was important because of the campus’ huge geographical size.

Sub-System Gateways Reduce Building Controller Equipment

Another significant cost-saving factor was TAMU’s request for a sub-system gateway device that would use the campus’ existing internet protocol (IP) network to tie together all buildings while still reducing the need for building controllers in every building. TAMU’s request resulted in Matrix developing the new Matrix System Gateway (MSG), which allows card swipe requests to be processed by building controllers in remote locations or other buildings. “We couldn’t justify the expense of building controller equipment in several hundred buildings, especially since many buildings might only be using two to four card readers,” noted Parr. “We also wanted the ability through the MSG and IP architecture to deploy a door that might not even be on our campus. So it was important to find an access control system that could operate from Ethernet wiring rather than copper twisted-pair telephone cable.”

Previously TAMU’s access control was implemented through its Diebold Inc., Canton, Ohio, ICAM system, which is a one-card “declining balance” system designed for a variety of financial functions ranging from student on-campus debit and purchasing plus residence hall. “Auditors told us having money functions and access control on the



same card wasn't a good idea," said Parr. "We requested bids from several companies because we wanted to upgrade to a full-featured access control system, rather than remain as an add-on system for a declining balance system."

Consequently the successful financial part of the Diebold system remained and was placed under the guidance of the school's financial department. TAMU hoped to eventually implement the dual-stripe card it uses today that keep financial transactions and access control separate, but on the same card.

Saving Costs With In-House Installation

The first step was spinning off access control's keyless entry system responsibilities to the Physical Plant Department and its key shop subsidiary which is facilitated by Schultz.

During the transition of separating financial and access control responsibilities, Schultz's department began spearheading the actual wiring and installation of keyless entry systems, which Diebold had previously performed. Doing the keyless entry system's installations in-house allowed TAMU to utilize their own personnel and also created a dependable single source responsibility that fell under Schultz's control. Any emergency maintenance on keyless entry systems could be handled immediately by trained in-house Physical Plant Department maintenance people.

Developing an in-house installation team proved beneficial after choosing the new access control system. Although Matrix Systems has its own in-house installation department, TAMU requested that Matrix train its key shop team to install the new access control system itself to avoid additional costs, according to Parr. "Once we were trained for installation on one or two of them, it was quite easy to handle the entire roll-out," said Schultz.

Six major leading access control manufacturers were reviewed for industry longevity, track records, user interfaces, internal architecture, product quality, customization, customer support, and compatibility with existing equipment. An access control review committee was established with representatives from residence life, student housing, the ROTC, the Physical Plant's key shop, telecommunications, and Computing and Information Services Department (CIF).

"During the bid evaluation process we received a lot of good feedback from Matrix customers such as Kodak, U.S. Steel, and the healthcare field that had huge systems similar to what we were planning," said Parr.

The fact the school wanted to retain its investment in 220 Matrix Systems model MS-570 card readers that Diebold had used as an OEM product helped put Matrix in the forefront. Retaining the existing card readers saved TAMU several thousand dollars in materials and labor versus a new access control system.

Seamless Conversion Between Old & New Systems

Saving money was important, however the University wanted a vendor that could customize to TAMU's specifications. For example, one of the largest challenges was implementing a seamless database inversion between the outgoing and incoming systems on a reader-by-reader basis with little downtime, according to Parr. By carefully inspecting vendor capabilities and compatibilities beforehand, the database inversion saved thousands of man-hours by converting electronically versus manual data re-entry. Specifically, Matrix devised custom interfaces that allowed the University's team to export data such as access lists from the existing VMS-based format to the relational database Matrix's Frontier software utilizes.

Keeping the ID production in TAMU's finance department where physical equipment and trained personnel already existed saved significant costs in relocating, training and new ID equipment purchases. Making this choice possible however required Matrix to customize an interface that allows information to be generated in the original Diebold CS Gold system and immediately transferred to the Frontier access control software for instantaneous use. "When fall semester freshmen first get their ID cards on the CS Gold system, they can literally walk to their respective residence hall and swipe their new card through a Matrix card reader to gain access," said Parr.

Going More High Tech in the Future

As the new access control system evolves, TAMU is adding new features such as an elevator reader distribution panel (RDP), which interfaces elevator controls with the access control system. Three elevator RDPs are now in place and Parr estimates another six will soon be online. The elevator RDPs allows card swiping and then opens only on the user's authorized floors.

In light of the Virginia Tech University tragedy in 2007, many universities are now looking for better lock down procedures and communications during disasters. While TAMU residence halls have been locked down for over 30 years, the University is hoping to take precautions further than other institutions. In addition to tying together all campus email, television, radio and other communications, he has also requested Matrix to interface with these alerts by providing text message readouts on building card readers.

Today, TAMU's access control system is running at full function and the sophistication the University envisioned when they specified the system. Since the system is completely scalable, future expandability possibilities are almost infinite. Future additions to the system will prove to be cost-cutting as well because TAMU plans to utilize new developments such as Power over Ethernet (PoE), which is an emerging security system technology that transmits electrical power and data to remote devices over an existing standard Ethernet network's twisted-pair CAT5 cables. This potentially

eliminates up to 33 percent in installation/labor costs associated with running individual AC power supplies to new entryway access control hardware.

TAMU is also experimenting with Omnilock wireless door locks from OSI, Chula Vista, Calif., which promises additional labor savings on new entry systems.

PoE is just one of many innovations TAMU has either used or plans to implement in the future to cut costs. While cutting edge systems are possible today, the TAMU's review committee's quest for reducing costs in the equipment procurement process makes it totally unique. Seamless conversion innovations between systems, in-house installation, and reusing existing equipment helped TAMU avoid additional costs but in no way sacrificed the integrity of the system.