

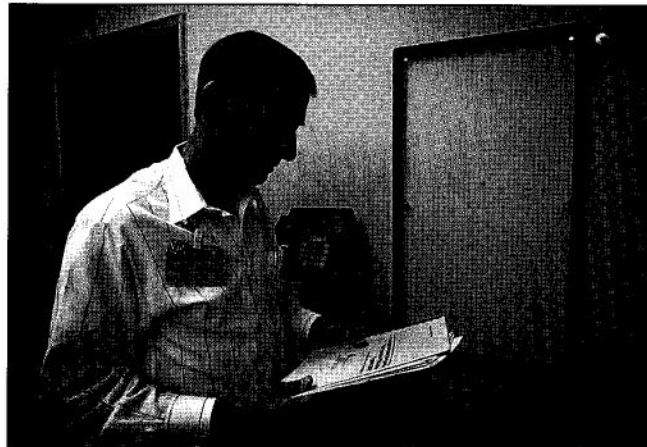
Security at a Dispatch Facility

An RF/ID system using TIRIS transponders helps an emergency dispatch center monitor access and track time and attendance.

Paul Quinn, Features Editor

Maintaining the safety and well-being of a metropolitan area requires the careful orchestration and dispatch of police, firefighters, and emergency medical personnel. When the city of Fort Worth, Texas (pop. 390,000), made the decision to build a new communications dispatch facility, it decided that a consolidated facility would provide the best service. However, this approach brought with it special requirements, as the new building would contain separate zones for each department, and it was deemed desirable to limit access between these departments.

Public officials realized it would be impractical to physically monitor the two main entrances plus the three department entrances. Automated access control was, they felt, a necessity if they were to provide an efficient means of regulating the flow of the 180 employees assigned to the facility. Although approximately 30 employees occupy the center at any one time, the task of tracking personnel is compli-



As the employee approaches the antenna (rectangle fastened to wall), the tiny transponder in the badge is automatically read and checked against a list of authorized codes.

cated by the fact of different shifts.

Initially, a numeric keypad-based system was installed, but the solution was far from optimal. Not only did it require employees to spend time waiting in line and entering their codes—all employees used the same code, compromising the security of the system. Bar code and magnetic stripe were also considered, but these technologies were rejected based on concerns that bar codes could be easily duplicated and magnetic stripe cards eventually wear out.

The city enlisted the aid of The Reynolds Company, a systems integrator in nearby Dallas, and a solution based on radio frequency identification (RF/ID) was chosen. The system, incorporating elements from Texas Instruments and Linx Data Terminals, proved effective not only for access control, but for monitoring time and attendance.

The Heart of the System

Hardware for the system consists of five Linx III-2/N terminals, one mounted at each of the two main entrances and at

each of three department doors within the center. Each terminal is coupled to a TIRIS antenna and stationary reader unit. The five remote systems are interfaced via a Linx 485 network with a 386-based PC located in the shift supervisor's office. The PC, which also has a Linx terminal next to it, serves as the controller and database host for the system. Application software, installed in the PC, was written by The Reynolds Company.

Employees are issued individual ID badges, each carrying a uniquely coded

TIRIS (Texas Instruments Registration and Identification System) transponder. When an employee walks up to a controlled-access door, the antenna on the Linx terminal sends a radio signal that reads the transponder's unique identification code. The terminal performs a look-up to see if the code is valid and, if so, triggers an electronic lock on the door, allowing the employee to enter. Each door terminal maintains a look-up file of codes authorized for it. Thus, even if the PC goes down, the door remains operational.

The transaction takes less than a second, and, since the terminal can read a transponder up to 30 inches away, the door is usually ready to open by the time the employee reaches for the latch. The badge can be read even through clothing, making it unnecessary for an employee to remove the badge from a wallet or handbag.

The host PC collects and maintains a running account of each employee's entries and exits, including which doors were used. A record is also kept of an employee's attempt to access an unauthorized door. Reports can be extracted

from the PC, giving a supervisor a review of these activities.

Because TIRIS transponders have read/write capability, it's a simple matter to enroll an employee in the access security system. Using the PC and its attached terminal, a supervisor uses his/her password to pull up a table of valid ID codes. After selecting a code, the terminal is instructed to load the code into the transponder and the badge is ready for service.

If an employee forgets the badge, he/she enters his/her four-digit PIN code, using the terminal's keypad. If an authorized visitor, e.g., a police detective, needs access, a house phone, located beside each terminal, can be used to call the shift supervisor. At this point, a randomly selected five-digit number is given to the employee who then types it in on the numeric keypad, unlocking the door. The code is good for only one entry and cannot be reused within a certain time frame. For additional security, video cameras are mounted at the two main entrances.

The new system, which has been up and running for more than a year, has

worked out so well that the city is considering future uses such as security gates for the outer parking lot. □

APPLICATION PROFILE

Company Name:

City of Fort Worth
Public Safety Communications Center
Fort Worth, Texas

Business: Communications for metropolitan police, fire, and emergency medical resources

Hardware/Software: Linx III-2/N terminals; TIRIS STUs, antennas, and transponders

Primary Application: Access control, time and attendance

Primary Benefits: Tighter security, faster entry/exit of employees, automatic record-keeping of employee movement

Resources:

Linx Data Terminals, Inc.
625 Digital Dr., Ste. 100
Plano, TX 75075
(214) 964-7090

The Reynolds Company
140-B Regal Row
Dallas, TX 75247
(214) 951-0127

Texas Instruments Inc.
34 Forest St., MS-20-27
Attleboro, MA 02703
(508) 699-3174