

By Using the Right Biometrics, Organizations Maximize Security and Convenience

As integrators and end-users learn which biometric technology to use for each application, biometrics will grow even faster. HandReaders and fingerprint readers constitute 80 percent of the biometrics market for access control and time and attendance applications. One expects to find them in ultra-secure environments such as airports and nuclear plants. However, more and more, they are being commonly used in very low-tech facilities such as health clubs and spas to avoid the problems and fraud of card-based systems. Time and attendance applications continue to be an important market.

According to the research firm of Frost & Sullivan in its *World Biometrics Report*, the physical access control and time and attendance segment has been the largest revenue generating application for the total biometrics market and its value is expected to continue rising. Biometric projects have helped government agencies, universities, airports, nuclear power plants, retail chain stores, financial institutions, hospitals, and other users cut costs and simultaneously increase security levels.

There is an unparalleled list of successful biometric implementations across the globe and its varied applications are reflected in the diversity of its users. From McDonald's restaurants in Latin America to Ben Gurion Airport in Israel, biometrics are finding an enthusiastic audience in both the time and attendance and security sectors. Whether the application is for maximum security, or for maximum flexibility or convenience, biometric technology is providing access for a virtually endless variety of uses.

If there are been one major impediment to biometrics growth, it has probably been the tendency to view all biometrics as equal. Against such a belief, too often people have used the wrong biometric technology in the wrong applications. In some cases, the sales went to the biometric that cost the least. In other cases, manufacturers have only had one biometric to tout, so this is understandable. However, with the advent of biometric manufacturers offering more than just one technology, end users will finally be able to trust that each biometric selected is the right biometric for that access point.

Frost & Sullivan has recognized this by naming Recognition Systems as their recipient of the 2004 Application Market Penetration Leadership Award for access control and time and attendance applications.

“Recognition Systems is not only a global pioneer and leader in the hand geometry biometrics segment, but has also successfully leveraged its diverse expertise to offer fingerprint products for access control applications,” notes Prianka Chopra, industry manager with Frost & Sullivan.

The company also received the 2004 Technology Leadership Award in Frost & Sullivan’s Technical Insights study, *Advances in Aviation Security Technologies*, in recognition of its pioneering role in the development of hand recognition technology and in particular for its development of innovative HandKey and FingerKey systems that are now installed in high profile locations across the world, including a plethora of airports in the United States, Israel and the Republic of Korea.

For instance, Frost & Sullivan highlights, the San Francisco International Airport, which has used the HandKeys to increase security since 1993, added more of the same to its additional international terminal in 1999. The HandKey product line is used at the Toledo Express Airport in Toledo, Ohio. Handreaders were installed in September 2003 to monitor and control the movement of employees in secure areas.

“San Francisco International Airport controls access to over 180 doors and has more than 18,000 individuals enrolled in its system, which performs more than 25,000 biometric checks daily,” notes Frost & Sullivan’s industry analyst Michael Valenti. “No other biometric technology has demonstrated this impressive long-term reliability in the aviation environment.”

HandReaders are also used to security speed pre-screened travelers through the immigration and security checks at Ben Gurion International Airport in Tel Aviv. However, it’s not only major airports that are leveraging the heightened security of biometrics.

At Yeager Airport in Charleston, West Va., USA, HandReaders restrict access to the control tower, which is located in the airport terminal, and also to the HVAC system and other sensitive equipment. The control tower doors are opened about every five minutes around the clock. The HandReaders are all networked to the airport's central security system computer. One of the HandReaders is used as the master for enrollment purposes.

"It has been the consensus since 9-11 that using biometrics as an access control validation is the way to go," emphasizes Yeager Airport Director Rick Atkinson. "Sen. Rockefeller, the ranking member of the Aviation Subcommittee of the Senate Commerce Committee, held a Senate Hearing on aviation and airport security in Morristown. Since vendors were present, we were able to see a biometrics demonstration and learn about hand geometry."

The airport has its own police force and they administer all of the access control equipment. Yeager Airport's tower previously required 24-hour police protection for access control. This cost the airport US\$1,200 per day. The HandReaders have eliminated the need for guards, saving the airport a substantial sum on access control.

"In response to 9-11 and the increased concern for better security at the nation's airports, we decided to try hand geometry to secure access to our control tower," Atkinson reports. "Although we were not one of the 18 airports to receive funding for the Access Control Pilot Program being run by the TSA, we expect to be affected by the results of that program. It is our feeling that the government will recommend that some form of biometrics be used instead of or in addition to other access control measures. We feel that hand geometry is the best and most reliable biometric technology available."

Anti-Terror Applications

While it is well known that biometric technology is helping airports, governments and companies deal with the increased threat of terrorism around the globe, many companies are taking unpublicized, unprecedented measures to strictly control access to sensitive sites.

In Germany, a major oil company is using biometric HandReaders to ensure that only authorized drivers enter its fuel storage terminal. The HandReaders help the company meet an increased worldwide need for security at refineries and fuel storage depots, and at the same time satisfy a new German law requiring positive identification for anyone who transports dangerous materials.

“We wanted to be able to identify truck drivers before they entered the terminal,” explains the terminal’s manager. “We needed a solid system that could work outside in inclement weather, with loud engine noise and sometimes in the dark. Most biometric systems are well-suited for lab conditions, but not for harsh outdoor conditions.”

HandReaders are installed at both entrances to the fuel storage terminal at a height that allows a driver to place a hand on the reader without leaving the cab of the truck. About 1,500 drivers have been enrolled in the system and the number is growing.

“Since we put the HandReader system in place in September of 2001, we have not needed the 24-hour security guard at the terminal entrance. That has resulted in substantial savings in personnel costs,” the manager reports.

Similar HandReader systems are in use at terminals in Belgium and may expand further throughout Europe.

Construction Sites Get Creative in Hong Kong

In Hong Kong’s world of high-rise construction, just getting authorized employees in and out of a job site – and keeping unauthorized individuals out – is a major undertaking. One construction project alone can employ thousands of workers at any given time and up to 10,000 workers may leave their mark on a site from foundation to completion. More than 95 percent of Hong Kong construction involves immense high-rise buildings.

Protecting projects from theft and keeping people from getting hurt on construction sites are always a top concern. In Hong Kong, strict labor and safety laws that prevent illegal workers, and workers without safety training, from entering construction sites makes strict access control even more urgent. General contractors who violate these laws in Hong Kong receive heavy penalties when they are caught.

Hong Kong contractors are increasingly turning to biometric technology to help them quickly give access to authorized workers and accurately deny entry to people who should not be on site. With biometric technology, a worker's permit and safety training records, along with expiration dates, can be entered into a database that not only verifies an employee's identity, but instantly checks to see if that employee is authorized to be there. For many Hong Kong construction companies, biometric HandReaders are the technology of choice.

First of all, they are accurate and fast, even with extremely high-volume entrances and exits. Second, they can withstand extreme weather conditions. Third, they work even if a user's hand is dirty or has cuts. That's an important feature on a construction site, and it's a capability not offered

by other biometric readers. And last, but certainly not least, HandReaders integrate smoothly into time and attendance programs, a real plus for cost-conscious employers.

Payroll Applications: Time is Money

All nine locales of Don Carter All Star Lanes, popular bowling alleys, in Florida, Texas and Louisiana in the United States use biometric HandPunch terminals to clock its 700 employees in and out, saving the corporation between 400 to 500 hours of payroll preparation time per year.

The HandPunch eliminates the expenses associated with employee badges and fraud caused by buddy punching. Instead of having to fill out or punch timecards, employees simply place their hands on the HandPunch.

“We wanted to have a time clock system that would keep people honest,” reports Adam Wyse, proprietor and general manager of Don Carter All Star Lanes-Dallas West. “The HandPunch was recommended to us by our Human Resources Department. We had been using a magnetic stripe system but the HandPunch assures the person checking in is physically there. That eliminates buddy punching.”

“We wanted to eliminate time cards and automate both security and payroll,” explains President Barbara Flynn of People First, who does the payroll processing for Don Carter. “We also wanted to positively identify the person checking in and selected the HandPunch technology because we feel it is less invasive than other biometrics such as fingerprint and iris scan. Today, payroll is run in seconds rather than hours.”

“Before the HandPunch, it took us about three hours to calculate payroll manually,” remembers Wyse. “Now, we can do the entire payroll in 15 minutes. I can pull all punches, merge data, produce a time and attendance report, run overtime reports and analyze data quickly. The HandPunch has saved me a lot of time, effort and inaccuracies. I can even edit problems before payroll is run.”

Each Don Carter All Star Lanes locale employs between 50 to 80 people. The HandPunch is usually placed in the back of the hallway leading to the equipment where only employees have access. Each employee has his/her own code, which is keyed into the HandPunch. They then present their hand to the HandPunch and are clocked into work. Upon leaving work, they repeat the process. Managers at each location create the database and then upload the information to the People First corporate office where the payroll is run.

“We like the system because it functions well,” emphasizes Wyse. “We did the installation ourselves and the set up was very easy. I simply ran a phone line and it worked.”

Cardless Convenience

A ladies-only fitness club may be a far cry from the security needs of an airport or the gritty realm of a construction site, but they still have something in common – biometric HandReaders for access control. HandReaders ensure that only authorized members enter the six Spa Lady fitness clubs in Alberta, Canada. Using biometric technology also means that members don't have to deal with the hassle of remembering and showing a membership card at the front counter.

"We went with hand geometry because of its simplicity," explained Barry Sarazin, General Manager for Spa Lady. "We thought retina scanners were cool but silly. We didn't like picture IDs because women change their looks so often and the picture files were large and slow to load on the computer. And bar codes do not match the person to the ID."

Each Spa Lady club has between 800 to 1,000 transactions each day. Two HandReaders are placed at the entrance to each club. Each member is given a five-digit number, and they give this number to the receptionist, who pulls up the member's information. Then the member puts their hand on the reader, and the turnstiles let them in. The fitness clubs are in the process of installing an "express lane" with a standalone reader at each club, so that members can sign themselves in. Each Spa Lady facility will then have a total of three HandReaders.

An early adopter of biometric technology for non-security uses, Spa Lady has been successfully using HandReaders for the past eight years.

The Right Technology for the Right Job

There are two key issues in selecting the right biometric technology. You must keep the bad people out and you must be able to get the good people in. Interestingly, the most accurate biometric technologies have the smallest templates and, conversely, the most inaccurate biometric templates have the largest templates. For instance, a HandReader has a very small template while voice recognition has a very large template.

Thus, HandReaders handle any population volume with ease while providing impeccable reliability. With dramatically lower false reject and failure to enroll rates, the value of HandReaders grows as the number of users and/or transactions increases. Not only do they keep the bad guys out, HandReaders ensure the good guys gain access in *any* size application. This flexibility is why they cost a little more.

If the installation is outdoors or in harsh environments, the core technology of the HandReader lets it work in inclement weather, including temperature highs and lows. Both HandReaders and fingerprint readers are at ease in office environments.

Fingerprint readers complement HandReaders by being a low-cost biometric best used on doors accessed by less than 100 people. In these applications, the total number of transactions tends to be fairly low. Therefore, issues generated by the higher error rates exhibited in fingerprint technology end up being a minor inconvenience rather than a major hassle. Yet, adding the biometric technology provides a huge increase in security over a "card only" system.

In Summary

Millions of people daily use both hand geometry and fingerprint readers throughout the world. All research predicts an explosion in the demand for biometric technology in an ever-widening variety of markets and applications. Offering both higher security and increased convenience at the same time is a rare phenomenon in the security world, and that does not even begin to address the cost savings afforded by the use of biometrics for time and attendance applications. Wherever there is a need to control access or verify user identities, there is an opportunity for a biometric solution, as long as it is the right biometric.