SMART ID CARDS FOR EDUCATION:
Secure the Campus While Providing Essential Services

ZEBRA TECHNOLOGIES

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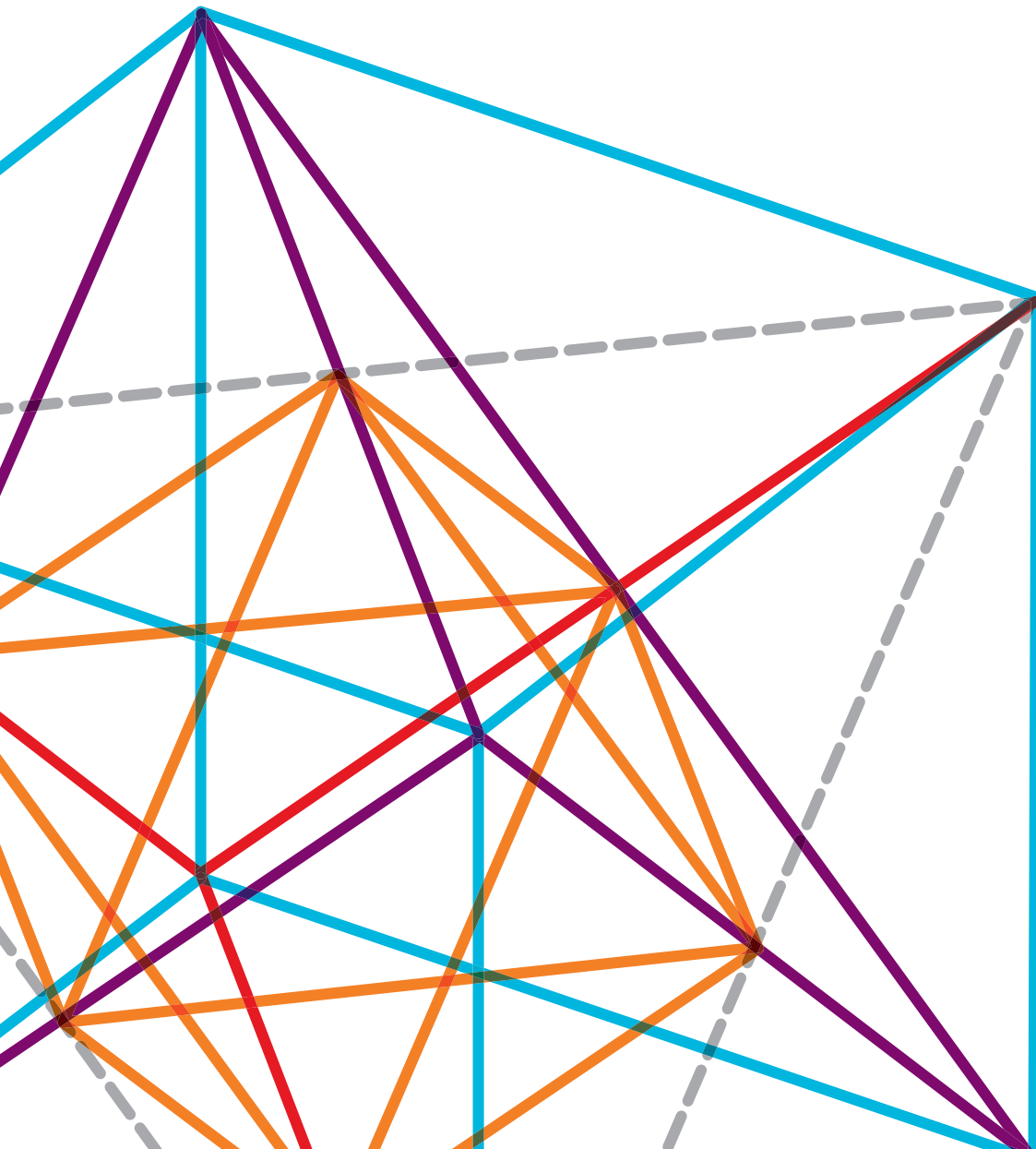
EXECUTIVE SUMMARY

From universities to primary schools, a revolution in technology is taking shape. The days when mundane tasks such as registration, book purchases, and meal programs required an army of administrators to manage piles of paperwork is but a digital page in today's history e-books. Twenty-first-century innovation is bringing automation—and a chance to improve security—to the campus.

With education costs skyrocketing, departments at all levels are looking for ways to do more with less—trimming expenses while maximizing staff productivity. Add the looming threats to campus security, and educators must make decisions that balance quality of education with protecting our students. In fact, the 2011 Campus Safety magazine's "How Safe Is Your Campus?" report revealed that 52 percent of faculty said their institutions fail to dedicate sufficient resources to campus safety and security.[1]

The simple answer relies on the same technology that corporations use—secure smart ID cards. Embedded with "smart" features such as radio frequency identification (RFID) and tamper-resistant laminates, education campuses can realize a wide range of benefits, from tightening security, to streamlining admission, to improving paid services. Read on to find out how you can benefit from smart cards, and learn how your school district can do more with less.

INTRODUCTION
EDUCATION IS READY FOR THE SMART CARD REVOLUTION

Educators at all levels are seeking ways to leverage technology to improve the quality of learning, simplify administrative tasks, and protect students. However, leaner budgets, growing numbers of students, and rising per-student costs mean that schools must improve efficiency. Answering the challenge demands innovative solutions that automate facility and class access, improve campus security, and streamline campus services such as meal and library programs.

In many ways, schools have been slow to adopt technologies commonly used in the private business sector to streamline operations. Student admission is still a manual, time-consuming process at the majority of primary education campuses. Institutions of higher education campuses have adopted online admissions and class registration, but students still must stop by the main office and stand in line to pick up their identification cards.

Inefficiencies from manual processes extend past the first week of school. Student tardiness is an ongoing issue. Students must stop by the office to pick up their handwritten tardy slips—and waste time better spent doing class activities. While this may seem trivial, many school districts depend on attendance numbers to maintain their funding levels. Less attendance means fewer dollars. Fortunately, advances in smart ID card technologies and the surrounding infrastructure offer the optimal solution for streamlining administrative tasks.

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[1] How Safe is Your Campus? Survey Results: Universities http://www.campussafetymagazine.com/Channel/University-Security/Articles/Images/University-Public-Safety-Statistics/1481.aspx

SMART ACCESS CARDS
WHAT THEY ARE, HOW THEY WORK

The Intelligence of Embedded RFID

The term "smart access cards" in education, business, and government applications encompasses a wide range of technologies. The common feature of most contactless, proximity-based solutions relies on embedded high-frequency (HF) RFID technology. Most contact type ID cards use magnetic stripe technology, which means students must swipe their cards through a reader, slowing down student access and creating bottlenecks. Magnetic stripe cards are also unreliable since they are easily de-magnetized.

Education access-card applications can benefit from UHF Gen 2 RFID's long-read range and fast identification capabilities. Schools can eliminate single-file, one-at-a-time card reads. Groups of students can move through large, open entry and exit points, rather than having to pass through narrow doorways, gates or turnstiles.

While conditions change in the business world, education facilities need solutions that can stand the test of time—future-proofed to last a student's campus tenure. Made from durable materials such as polyester and PVC, secure ID cards can last the entire term of a student's education—saving the institution the recurring costs of annual card replacement.

AN OPEN BOOK OF BENEFITS
SECURITY, EFFICIENCY AND COST REDUCTION

Just imagine: one ID card for everything—and that is the key point. Smart cards can serve as the foundation for a wide range of applications, providing opportunities to streamline security and administrative tasks across the entire campus. The process starts during student admission or when faculty/staff receive their new hire orientation. It is here that the school issues a durable, smart ID card embedded with RFID technology. Once an education district implements smart ID cards, the technology serves as the ideal foundation for ongoing benefits, campus wide.

TIGHTEN PHYSICAL SECURITY AND FACILITY ACCESS

Student, Staff and Visitor Management

Security is more than just ensuring that visitors casually check in at the office. Protecting our students is becoming increasingly important. Other than hire enough security guards to police every facility and access point, what can education departments do to improve security today?

Throughout the nation, many colleges and universities use visitor management systems to improve security and protect students against unauthorized visitors and people posing as students. While visitor management may seem like an issue only for K-12 facilities, college campuses are an open environment, making it difficult to monitor activity.

School security departments must know who is on the campus at all times. The first step is to strictly enforce visitor sign-in and issue the visitor a temporary RFID-enabled ID smart card that affords track-and-trace technologies. Upon sign-in, school visitor software can also determine if the visitor is wanted by law enforcement or registered in the sex offender database—creating a path back into law enforcement.

Access Control for Secure Buildings or Rooms

RFID-enabled smart cards present the optimal solution for not only visitor management, but access control for all people, campus wide. Issuing a smart ID card to all faculty, students, staff and visitors allows security departments to control who has access to what, where and when. Campuses can improve dormitory safety, secure labs with high-value equipment, and ensure research departments performing specialized projects only provide access to those with the right credentials.

Optimally, schools can integrate their enterprise resource planning (ERP) system with the ID card system. Doing so provides a single point of management for allowing or denying physical access to students attending classes in different buildings.

Time and Attendance Tracking

For many school districts, tracking the amount of time students spend performing class time is vital for planning and funding. To improve security and increase attendance rates, the Spring school district in Houston, Texas, has distributed RFID-enabled ID badges to 13,500 of its 36,000 students since December 2008. The technology replaces the manual attendance tracking that faculty had to perform for each class session and for each student.

With RFID-enabled plastic card personalization and integration of digital photo identification solutions, schools can move from a handwritten to an automated approach. Smart access card solutions deliver a new level of accountability and enforcement that can help reduce the number of tardies. This wise investment of the school budget directly gives students more in-class time, while saving administrative time and money.

Streamline Library Access and Inventory Management

Campus libraries, printers and copy rooms should remain exclusive to students. With RFID card readers at the door, students entering the library or copy room can use their student ID to gain access. Students can then check out books automatically, with all information recorded and loaded into the student database. This eliminates the need for library checkout cards and provides real-time information on the status of overdue books. Schools can use this information to lock students out of privileges until they return the books or deduct the book cost from the student's debit fund.

EXPAND PAID SERVICES

Electronic Payment for Food, Beverages and Bookstores

While on campus, students not only fill their minds, but also their stomachs. Students can load their cards with meal credits, allowing them to use their IDs like a debit card at vending machines and in dining halls. ID cards can include a pre-paid spending account that students can use to make purchases at student stores and food service locations, as well as at school events. Parents and students can access accounts online to view transactions, add funds and establish automatic allowances. The benefits extend well beyond food and beverage purchases. Students can also use their smart ID cards to purchase books, pay for temporary parking on campus, and resolve parking citations.

Expand Off-Campus Affiliate Programs

The large student populations at universities and college campuses fill the surrounding community with a captive consumer audience. Smart ID cards bring the campus and community together to generate value-added opportunities for local stores, restaurants and service providers. Students can use their cards on or off campus and accrue credits and incentives for further purchases. Affiliate programs can also extend outside the local community into large franchises. When coupled with customer relationship management (CRM) databases, smart card purchases can provide valuable data for marketing metrics, enhancing affiliate programs even further.

TYING IT ALL TOGETHER
SMART CARD PRINTING TECHNOLOGIES

All the access card technologies described in this paper, including barcode, RFID, magnetic stripe, smart card, graphics and photo security features, can be printed on demand—wherever and whenever. Switching from pre-printed access cards, temporary IDs and passes to on-demand identification printing systems provides an immediate benefit by removing the worries related to managing and securing costly materials.

A barcode is the most widely used data storage format for security printing applications, and RFID is the fastest growing. Common linear barcodes easily meet most needs for encoding employee and visitor identification. Two-dimensional (2-D) barcodes can encode significantly more text than linear codes and store digitized photos, graphics, fingerprint files and other biometric data. Smart card RFID printing solutions provide multiple encoding and security technologies, including holograms and magnetic stripes.

CARD PRINTERS

Digital plastic card printers offer the ability to create custom cards tailored to the application, at the point of issuance. System administrators can invalidate lost or stolen cards and issue replacements immediately. Unlike traditional ID card systems that lacked customization or required time-consuming photo processing, cutting, and laminating, today's digital print-on-demand (POD) systems enable completely automated production of highly customized, secure cards. A wide variety of card printers exist to meet user needs, including high-duty cycle models for applications that require thousands of cards annually, such as large universities.

Digitally printed plastic cards provide numerous technological features but start with a blank plastic card customizable with any combination of artwork, graphics, text, digital photographs, barcodes, logos and more. The printer can encode additional machine-readable information, such as magnetic stripes and smart card chips. The image quality of plastic photo ID cards produced with digital printing technology is far superior and tamper resistant compared to those produced through the traditional method of trimming printed photos and laminating them onto the card. Different card materials and laminates provide additional protection from tampering.

Magnetic stripe cards carry more data than standard barcodes but require media that costs more. Card issuers stock blank magnetic stripe cards and encode them on demand. RFID-enabled smart cards can hold the most data of any medium—up to 100 times more than a magnetic stripe card—and often include a processor chip that enables multiple applications.

CONCLUSION

Multifunction smart ID cards offer several easy and cost-effective ways for campuses to raise the level of protection and quality of education. Today's smart access card technologies provide superior range and read performance so that educational institutions can improve efficiency and security at multiple levels.
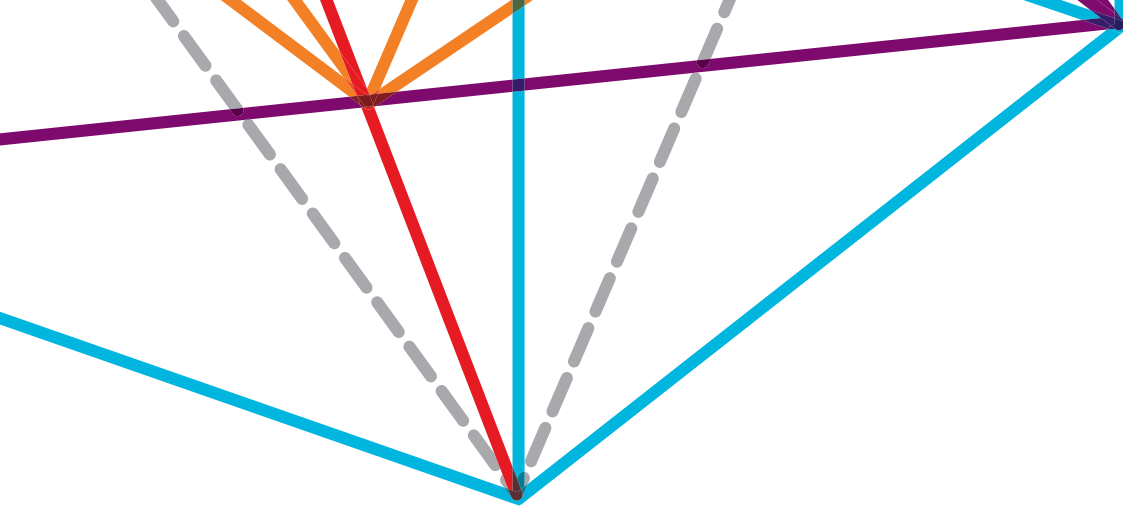
Print-on-demand card printers can create secure student and staff IDs so campuses can maintain a safe learning environment. With IDs ranging from basic functionality to smart cards, schools can streamline records management, simplify class registration and attendance, and control access to secure areas. Fast throughput of student ID cards allows for on-demand, in-house printing to serve students faster.

With smart ID cards and POD solutions, parents and faculty alike can gain peace of mind that their students and campuses remain protected. Educators can now do more with less, while creating new opportunities to enhance the educational experience.

A global leader respected for innovation and reliability, Zebra offers technologies that illuminate organizations' operational events involving their assets, people and transactions, allowing them to see opportunities to create new value. We call it the Visible Value Chain.

Zebra's extensive portfolio of marking and printing technologies, including barcode, RFID, GPS and sensoring, turns the physical into the digital to give operational events a virtual voice. This enables organizations to know in real-time the location, condition, timing and accuracy of the events occurring throughout their value chain. Once the events are seen, organizations can create new value from what is already there.

For more information about Zebra's solutions, visit www.zebra.com.

P1043262 (02/13)