

Step-by-step Guide to Creating Dynamic ID Cards



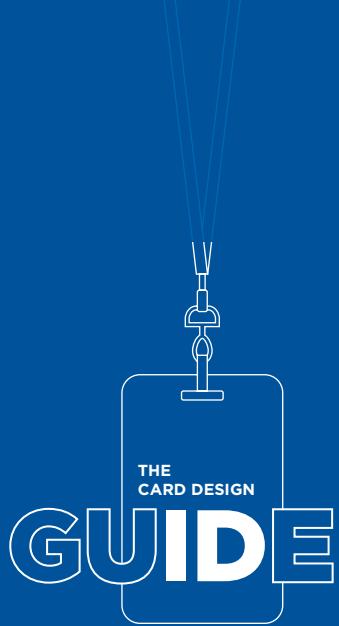
CARD DESIGN GUIDE



Welcome to our step-by-step guide.

If you have been charged with designing ID cards for your organization, you have an important responsibility. Creating an effective ID card design involves more than meets the eye. However, with a little planning and consideration of the best practices discussed in this guide, it will be an enjoyable experience.

After reviewing this simple step-by-step overview and our gallery of existing ID cards, you'll be ready to begin — or enhance — your own design. Creating dynamic, effective and secure ID cards has never been easier.



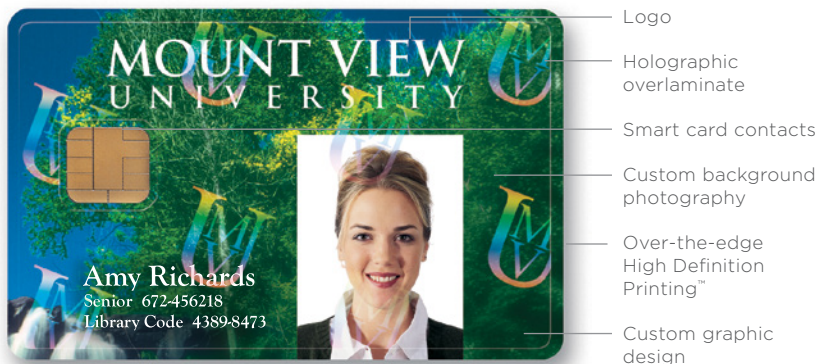
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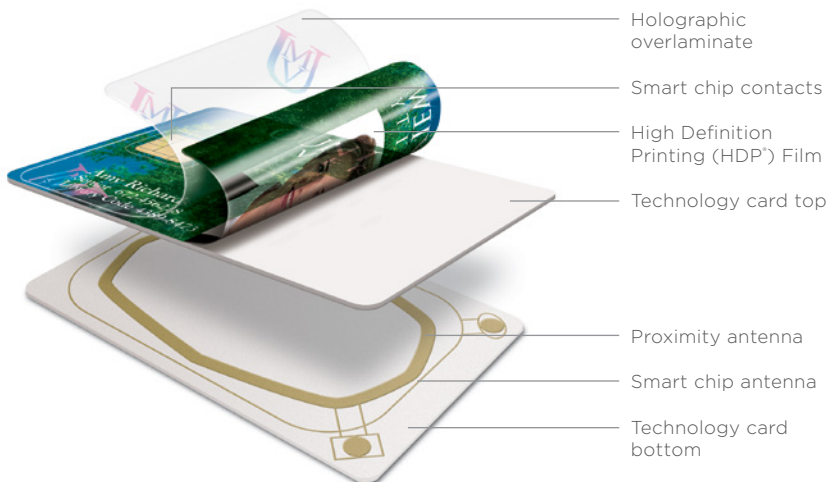
The Anatomy of a Secure ID Card

A secure ID card is more than a name and a photo. It requires visual security elements to protect itself from tampering and forgery. Technology cards include embedded electronics, antennas and smart chip contacts that usually affect card design.

Customized Card Features



Technology Card Features





STEP 1

Define the Parameters of Your ID Card Design

Creating an effective ID card design involves more than meets the eye.

That's why this first step is so important. You need to understand the objectives of your organization's entire ID card program.

While designing a visually attractive card is also important, it's secondary to designing a card that helps:

- Enhance physical and logical security
- Increase efficiency and productivity
- Reduce vulnerability to counterfeiting
- Reflect the organization's brand identity

These objectives will later help determine the parameters of your card design.



ID card program objectives will strongly influence your ID card design parameters.



Speak with a Card Identity System Expert

At the beginning of your process, **consider speaking with an expert** in card identity systems. Whether your cards are designed to protect your organization or promote it (or both), authorized HID Global® integrators are an excellent resource to help you define and achieve your objectives.



Here are a few questions about ID card objectives to help you start **defining the parameters** of your ID card design:

- **How many employees**, contractors and visitors do we have? Will we have separate card designs for each?
- How many different areas of our organization will interact with the cards? Will we need **different levels of security clearance** for each?
- Does our card design need to comply with **any government regulations**?
- How will we **verify and authenticate** the identity of each cardholder?



STEP 2

Determine the Level of Visual Security

A color photo on a plain white card just isn't enough anymore.

Today, anyone with a computer can create a legitimate-looking ID card with ease. Proper card design can help reduce your vulnerability to counterfeit ID cards. Incorporating holographic security elements that are difficult to forge, yet easy to authenticate, should be the first consideration in a secure card design. There are choices for every need and budget, from basic elements such as a simple foil to sophisticated solutions such as custom-designed holographic overlaminates.



92-3884 8973



Daniel Garcia

An authorized HID Global integrator can be an **excellent resource** for determining the security elements in your next card design. ▲



- ▲ Holograms can be loaded with high-tech, layered security features from microtext and fine line (guilloche) designs to **optically variable devices (OVDs)** like animated morphing imagery.

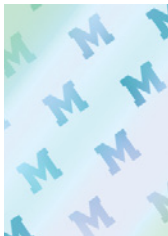


- ◀ The starting point of any secure ID card design is a minimum **300 dpi color photograph**.

From a design perspective, the larger and more vivid the photo is, the easier it is to authenticate the cardholder.



- ▲ **Holographic foils** and images, like those found on credit cards, may be applied to a card's surface or embedded below its surface for even more security.



- ◀ **Holographic overlaminates** can contain an off-the-shelf holographic design, or you can create a custom design for even greater security — and brand enhancement.



STEP 3

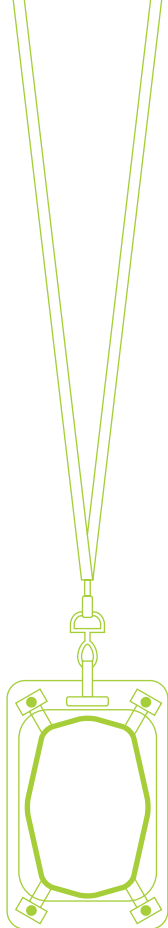
Determine the Necessary Technologies

The card technologies your organization uses will influence your card design.

They will also affect the selection of the card printer/encoder you'll use. But you can still create a great-looking card, if your design accommodates technologies such as:

- Bar codes
- Contact and contactless smart cards
- Proximity antennae
- Magnetic stripes

Whether on the inside or outside of the card, these technologies can alter surfaces and make printing any design more challenging.

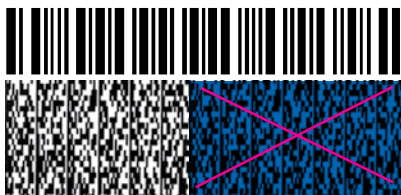


Cards with embedded electronics

like smart cards or “clamshell” proximity cards will affect your design and the type of printer that you will use.



Achieving an effective ID card design involves three layers: functionality, security and graphics. When making decisions about these elements, it is smart to **involve the experts**, whether they are your security personnel, ID card system integrators or graphic designers.



Do you plan to utilize a **bar code** in your operations?

Remember to allow adequate space around it to **ensure trouble-free scanning**. Also, if your bar code is printed on a background color, be sure that background color provides sufficient contrast for scannability.



Designing a card with a **magnetic stripe**? Remember that some elements like this have fixed positions on ID cards.



The electronics inside **proximity cards** create an irregular card surface. For consistent image quality on prox and other technology cards, consider using **High Definition Printing™ technology**.



Most traditional direct-to-card smart card printers can't print tightly around smart card contacts without risking damage to their print heads. High Definition Printing Technology **prints up to the contacts' edges**, and over the card edge for a high-quality appearance.



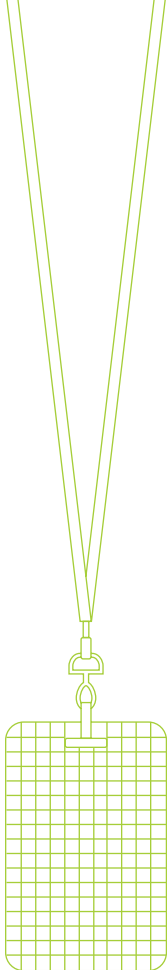
STEP 4

Determine Your ID Card's Orientation and Layout

For maximum effectiveness, explore both portrait and landscape orientations.

There is no one right answer. As you arrange the graphical elements of the card around the technology elements (which usually can't be moved), ask your self questions such as:

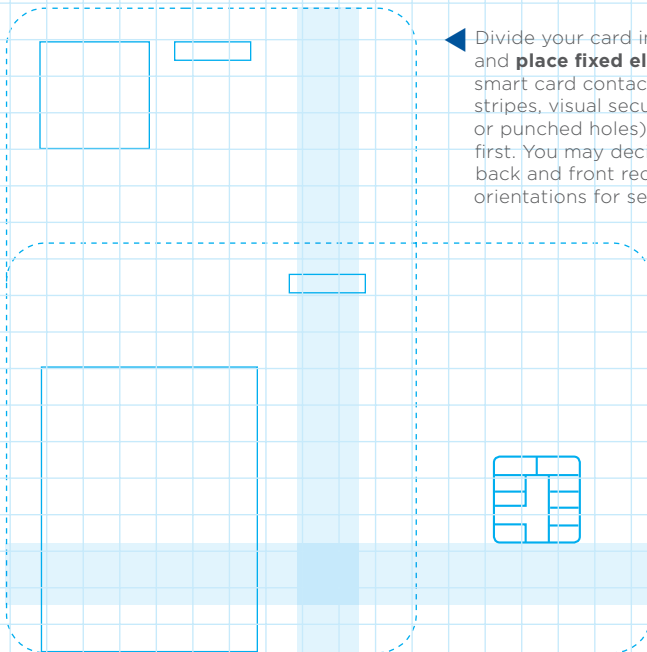
- How will the card be best displayed and most used?
- Where do the electronics on the card fall?
- Will the card need a hole punch for a clip or lanyard?
- Is there critical information printed on the card that, over time, might be rubbed off because of swipe abrasion? If so, consider adding a protective overlaminat.



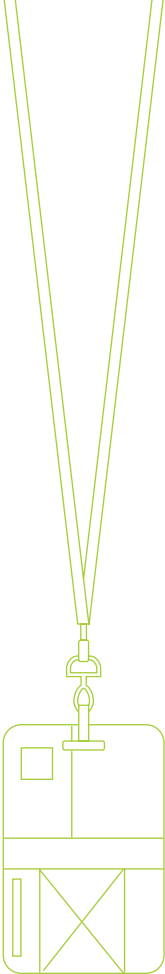
Don't forget! If you're going to have a lanyard hook directly onto the card, you'll need to allow for a hole punch in your design. Don't get caught with a hole in your organization's logo.



Many companies utilize both orientations as an at-a-glance verification aid. Fully functional vertical cards are worn by full-time employees. Less functional horizontal cards are worn by visitors and short-term contractors.



◀ Divide your card into a grid and **place fixed elements** (i.e., smart card contacts, magnetic stripes, visual security elements or punched holes) into position first. You may decide that the back and front require different orientations for security.



STEP 5

Select Graphics and a Type Face for Your Card

When designing your ID card, keep in mind that it's more than just a security device and functional tool — it's also an extension of your organization's image and brand. An attractive and professional card will reinforce the right message about your organization and its employees. And because a well-designed card is more likely to be worn, it will go a long way toward ensuring the effectiveness of your entire card program.

Fonts are a character set and style of a particular typeface.

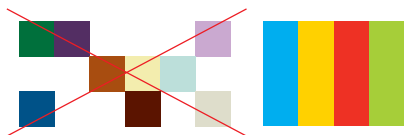
Helvetica 45 Light

Helvetica 55 Roman

Helvetica 85 Heavy



▲ Online **stock photo** companies can be a valuable resource for designing professional-looking cards with dynamic imagery.



◀ **Bright colors** typically work best. Dark colors can adversely affect readability. Likewise, pastel backgrounds can look washed out.



◀ A **textured background** minimizes flaws in the card surface better than solid backgrounds.



◀ **Contrasting colors** are often used to indicate different levels of access or security clearance.



◀ The cardholder's photo is typically the primary feature. That's why it is important to **use images of at least 300 dpi** and to make the photo as large as possible.

abcdefghijklmnopqrstuvwxyz
 ABCDEFGHIJKLMNOP

◀ A good type face promotes **easy readability** for fast and accurate authentication. A "sans serif" font works best.

~~Damini Basu
 IT: Server Support
 2007~~

Damini Basu
 IT: Server Support
 2007

◀ The use of **only one or two fonts** is suggested. Too many fonts can make a card difficult to read.



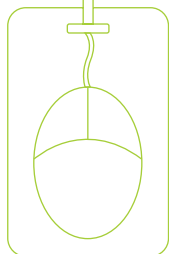
STEP 6

Print, Encode and Laminate your ID Cards

Now that you've invested the time to develop a custom design for your ID cards, it's important to choose the right card printer/encoder to help bring that design to life. If your card has simple magnetic stripe technology, or no electronics technology at all, consider traditional direct-to-card (DTC[®]) printing technology. If your card has embedded electronics, or if image quality is of the utmost importance, consider High Definition Printing[™] (HDP[®]) technology.

Depending on the printer model, HDP printers can be equipped with either a 300 dpi or 600 dpi printhead. For superior text and image quality, high resolution 600 dpi printing is highly recommended. Leveraging 600 dpi, colors are vibrant while images, text and barcodes are crisp – even precise, complex characters such as Kanji, Arabic or Cyrillic are clearly defined and easy-to-read.

Regardless of your card design, there are numerous printing, encoding and laminating options available to meet your on-demand needs.



▲ Visit [hidglobal.com/products/card-printers/fargo](https://www.hidglobal.com/products/card-printers/fargo) for more information on reliable printing, encoding and lamination solution options that can help bring your ID card design to life.



Knowing the components and capabilities of your **card identity system** will help you design a card that uses the system to your best advantage.

A holographic overlaminate lets you add a graphics-rich design layer to your card that substantially improves card security and durability.



▶ **How would your new design look on a High Definition card?**

As their name suggests, High Definition printers provide the best print quality available in today's desktop card printer market. From plain photo IDs to high-security technology cards, HDP technology helps designs jump off the card.

▶ **Advanced ID card printers** not only print cards, they can encode multiple technologies and laminate them — all in one pass.



▶ **Card issuance software** can improve the efficiency of creating and producing ID cards, and managing card issuance.



STEP 7

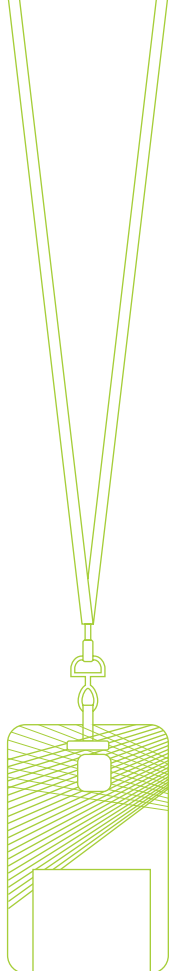
Test the Image Quality and Functionality of Your Cards

Ensure a successful introduction by performing comprehensive testing prior to a large-scale implementation. Identifying any performance issues at this point will save significant time and money.

Things to double-check:

- Is the image quality consistent?
- Is card data successfully read at all checkpoints?
- If you're using the cards to track activity, is that data being accurately transmitted to your systems?

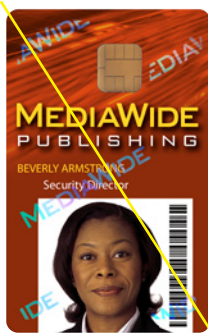
Congratulations. Once you've tested your ID card system at all points in the process, you can proceed with confidence.



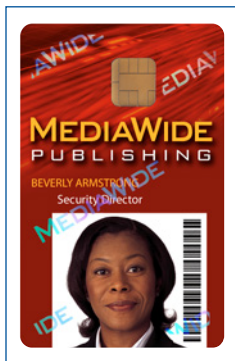
▲ Do your colors, imagery and text print precisely as you had planned? **Take the extra time to make it right.** You'll be looking at your ID cards, and the design on them, for a long time.



Testing your card design with the printer you intend to use will ensure that it won't present any surprises during mass card production.



Fine tune the imagery to your liking via graphics editing programs and your printer settings.



▶ Your new ID card will bring a heightened level of **security, productivity and efficiency** to your organization.

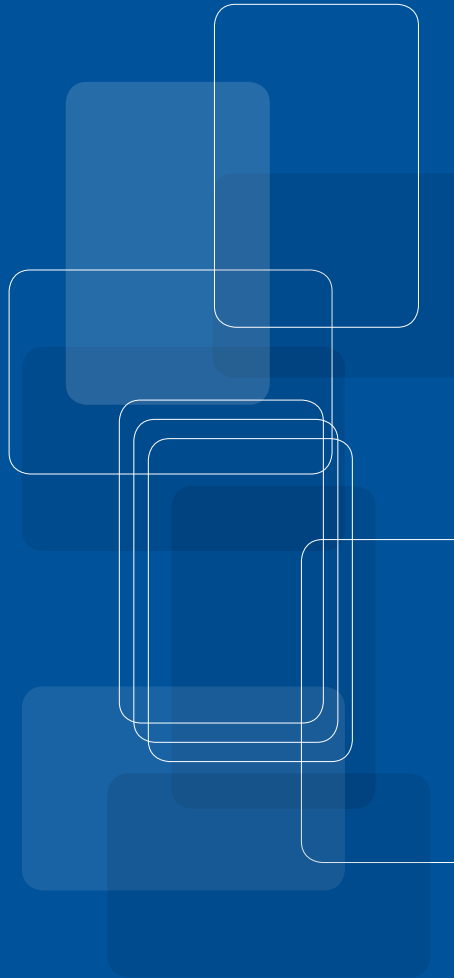
ID Card Gallery

SAMPLES OF EFFECTIVE ID CARD SOLUTIONS

Creating dynamic, effective and secure ID cards is something every organization can do.

While no two organizations are exactly alike, many share similar goals and challenges when it comes to securing assets and increasing productivity.

Let's take a look at some sample cards in the ID Card Gallery. They may offer the creative spark you need to improve upon your own unique solution.





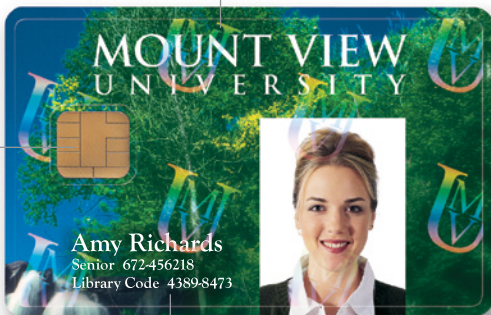
College and University

MOUNT VIEW UNIVERSITY: A highly regarded liberal arts university

KEY CONCERNS: *financial transactions, facility access, fraud prevention, brand enhancement*

What better way to **reinforce its reputation** as one of the nation's most prestigious and scenic campuses than by choosing a custom holographic overlamine to go over a background photograph of its renowned Mount View Park.

A student's identity and tuition **account balance** — read via the card's smart chip — must be verified before they are allowed to register for each semester's classes.



Students' identification numbers are used to **authenticate the user** in legacy campus facilities that do not yet have advanced card-reading equipment.

Mount View University was able to offset some of their card printing costs through a **sponsored partnership** with FastBank. The card's magnetic stripe offers students and faculty access to FastBank self-service kiosks throughout campus.



MVU students and staff have convenient and **speedy access** to library and media center materials as well as recreational equipment — all thanks to a convenient scan of a 2D bar code.

K-12 Education

STONE RIDGE SENIOR HIGH: A large suburban high school

KEY CONCERNS: *cashless cafeteria, attendance tracking, school pride, book and equipment tracking*

The card serves as a **durable and reusable** ticket to all school sporting events and other activities.

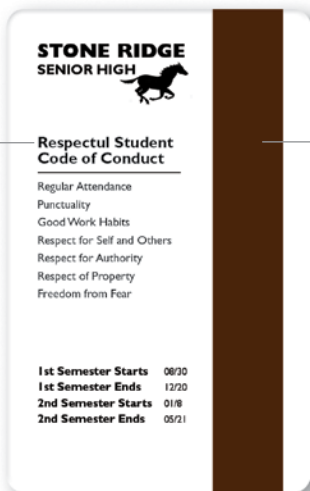
A large student photo helps staff **instantly verify** individuals as students of the school.



Vivid, colorful graphics **enhance and reinforce** the school's image. Plus, the students love to show their school colors.

The card's bar code is scanned at the beginning of each class to automate the school's **attendance tracking**. In emergencies, this can provide vital logistical information to responders.

The principal and student council agreed their **code of conduct** should be on every card.



With a **simple swipe** of the magnetic stripe, students can pay for their lunch, check out library books and access athletic facilities after school.

Federal Government

U.S. SECURITY DIVISION: A highly secure government agency

KEY CONCERNS: *regulation compliance, legacy system interoperability, security clearance levels*

A large cardholder photo on the card front and faint **duplicate monochrome image** on the back are an easy and effective way to deter counterfeiters who may only get a look at the front of an ID card.

Varying security clearance levels are communicated to security personnel via a prominent **color-coded system** on the front of the card.

The use of **several technologies** on a single card — one- and two-dimensional bar codes, a smart chip, optical stripe and antenna — are used to interface with both new and legacy systems in facilities of varying sophistication.



The crisp, colorful graphics of the American flag are designed to add a level of patriotism and **pride for cardholders**.

The card's smart chip allows virtually up-to-the-second **security clearance changes** for facilities and network access as events warrant.



State and Local Government

HAYES COUNTY GOVERNMENT CENTER: An urban government facility

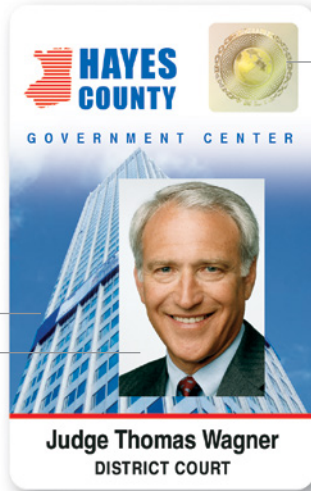
KEY CONCERNS:

access control, security clearance levels, reputation enhancement, public safety

Proud of its role in the waterfront redevelopment initiative, the Hayes County Government Center was eager to use **professional photography** of its new building on its ID cards.

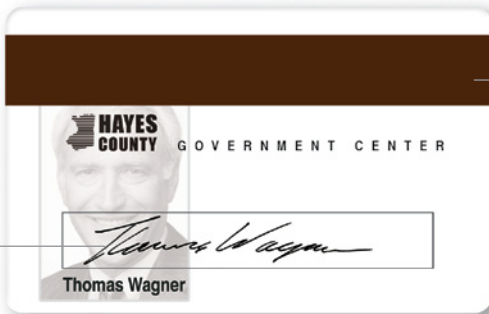
To **increase safety** following an intruder incident in the government center's previous location, the county mandated photo IDs for all employees — from judges to janitors.

Visitors to the restricted levels of the center can only be admitted with an escort and **verified employee photo and signature**.



The county used federal Homeland Security funds to augment the security of its card identity system by adding a **custom holographic foil** to the front of its cards.

The magnetic stripe facilitates tiered access to the building's floors. Employee access to individual floors is restricted to their appropriate **security clearance** level.



Large Corporate Campus

WILSONMAYER: A global high-tech engineering conglomerate with multiple divisions

KEY CONCERNS:

ultra-high security, card durability, government compliance, access control

A customized **holographic overlamine** provides a sophisticated layer of security and protects against UV light — helping to protect the firm's investment in several thousand cards.

WilsonMayer incorporated **marble pillars** into the background of its cards as a subtle nod to the firm's extensive experience working with government agencies.

The card's magnetic stripe can be reprogrammed to allow **temporary access** to facilities during long-term projects.



The complex **“turbine” hologram** around the WilsonMayer logo reinforces the company's origins in the space engineering field.

The victim of a recent industrial espionage incident, WilsonMayer incorporated **biometrics and a smart chip** to control employee access to sensitive floors of its headquarters. Note the visual identification of color-coded security clearance.



All elements of the identity card, including the smart chip are **FIPS 201 compliant** — ensuring that WilsonMayer is approved for work with government agencies at all levels.

Small to Medium Business

TRIAD MANUFACTURING: A growing manufacturing firm

KEY CONCERNS: *job and time tracking, inventory control, card security, brand enhancement*

The use of a large company logo on the front of the card plays an important role in reinforcing the company's new **brand identity** following a corporate acquisition.

Field employees scan their bar code at the beginning of service calls to initiate a client **project tracking system** at the corporate office.

The recent merger yielded a **new mission statement** now proudly shown on the back. Every employee carries an ID card, and therefore, every employee carries the mission.



Triad opted for a **tamper-evident** holographic foil as a cost-effective deterrent to card counterfeiting.



Swiping the magnetic stripe before using copy center services **automatically tracks** the subsequent costs to the appropriate cost center.

Healthcare

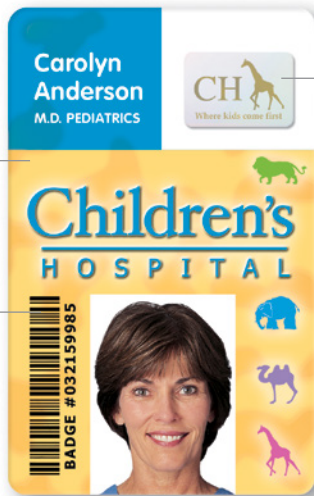
CHILDREN'S HOSPITAL: One of the nation's leading pediatric hospitals

KEY CONCERNS: *access control, security, data tracking, brand enhancement, patient experience*

The card's colors and simple design were chosen for their **ability to communicate** the hospital's pediatric focus.

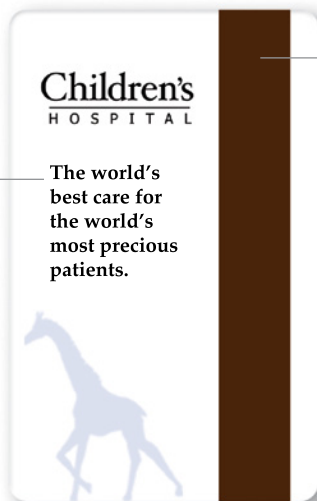
New **patient-safety measures** require caregivers to scan their card's bar code and then the patient's chart before administering drugs. That information is then transmitted to a central patient database.

The hospital's CEO requested that the hospital's **mission statement** be included on the back of the card "as a daily reminder of the importance of our mission."



The card's **custom holographic foil** not only provides a strong measure of security, it's often a starting point for communication between hospital staff and shy patients.

A smiling face and the use of animal shapes on the front of the card help provide a **measure of comfort** for the hospital's young patients.



The magnetic stripe restricts **floor access** and reduces unwanted traffic through intensive-care units of the hospital.

Loyalty and Membership

FITNESS 4 LIFE HEALTH CLUB: An ambitious new club chain

KEY CONCERNS: *attendance tracking, equipment access, fraud reduction, brand enhancement*

The club chose to include a **custom holographic foil** on the card as a graphically appealing way to protect against counterfeiting and reduce fraud.

A sign-in/sign-out bar code tracks the use of individual memberships and provides the club with valuable information used to initiate **member-retention** strategies upon periods of non-use.



As the new kid on the crowded health-club block, Fitness 4 Life aggressively looks to reinforce its **brand and mission** with existing members and prospects.



The magnetic stripe facilitated the introduction of silver, gold and platinum **membership levels** which provide access to special sections of each facility.

The magnetic stripe links to individual **member profiles** and provides positive reinforcement and encouragement to individuals on the workout machines as they approach their fitness goals.

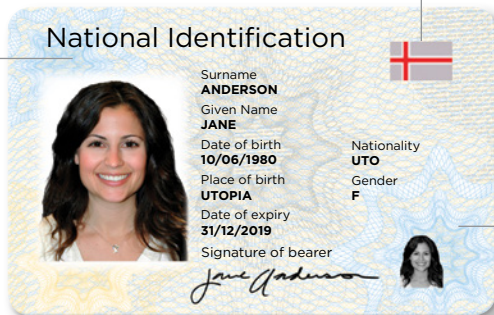
Government-to-Citizen: National ID

COUNTRY OF UTOPIA: A nation with a population of 25 million citizens

KEY CONCERNS: *citizen identity, access to government services, identity theft prevention, national pride*

A single, legal identity per person in the form of a **National ID Card** serves as the cornerstone of citizenship for Utopia. Implementing a combination of secure data storage and layered visual security safeguards personal data and mitigates fraud. A custom image of the nation's flag instills a sense of civic pride.

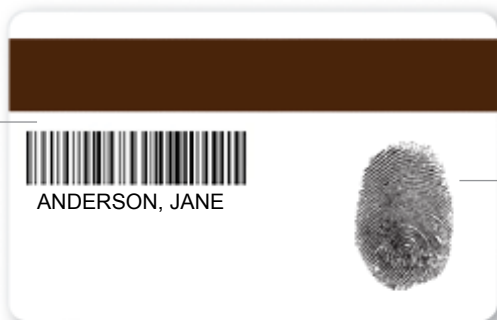
Pre-printed **Visual Security Elements** (VSEs) include Fine Line and Micro Text for added security.



Personalized with both color print and black-and-white laser cardholder images for One-2-One™ authentication.

Laser engraving enables multiple security features, such as surface relief for tactile authentication, detailed Micro Text and lenticular personalization such as multiple laser images (MLI) - All of which ensure cards are highly secure and counterfeit resistant.

Multiple technologies on a single card such as magnetic stripe and barcode provide proof of the right to vote and access to multiple government services.



Fingerprint biometrics are added to the card for additional cardholder authentication.

Leveraging **secure data storage**, substantial amounts of information can be stored directly on the card including images, birth certificates and demographic data.

Transportation

GO TRANSIT: A company that provides bus and light rail transportation for a metropolitan city.

KEY CONCERNS: *reloadable transit passes, ticket fraud prevention, brand recognition and loyalty*

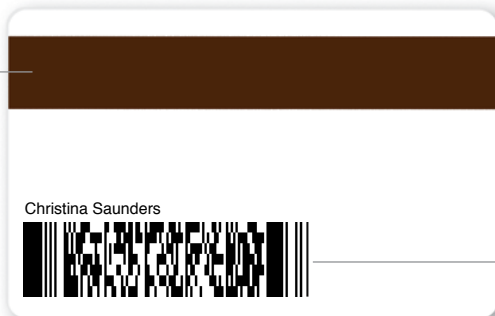
Smart Card transit ticketing ensures that transactions are highly secure and thwarts fraudulent paper ticket counterfeiting. Transit passes also provide improved efficiency and convenience for transit consumers.

Custom graphics provide GO Transit the opportunity to increase revenue via increased brand visibility and subsequent customer loyalty.



Transportation providers that support the convenience of **reloadable cashless transit** passes can experience an increase in consumer ridership.

Secure, reusable and reloadable cards result in significant **reduction of the cost and manual overhead** associated with maintaining paper-based ticketing systems.



A simple scan of the **2D barcode** grants access to multiple modes of transportation such as bus and light rail.

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